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CONTENTS:

ORIGINAL COMMUNICATIONS:

DIAGNOSIS UNDER ARTIFICIAL
LIGHT. ITS DIFFICULTIES AND
A SOLUTION OF THE PROBLEM, by
A. Cressy Morrison, Chicago, Ill., 399

SOME PRACTICAL SUGGESTIONS IN
THE USE OF THE PROCTOSCOPE,
by Joseph M. Matthews, M. D.
Louisville, Ky., - - - - 401

JEJUNAL ARTERY. (ARTERIA JE-
JUNALIS,) by Byron Robinson,
B. S., M. D., Chicago, Ill., - 402

SELECTED ORIGINAL ARTICLES:

THE SIGNIFICANCE AND TREAT-
MENT OF UTERINE HEMORRHAGE,
by William Edward Fitch, M. D., 408

THE USE OF FAT-FREE MILK IN
INFANT FEEDING, by Charles W.
Townsend, M. D., Boston, Mass., 415

DEVIATION OF THE NASAL SEPTUM;
SOME OF THE DISTURBANCES—
ITS CAUSE—TREATMENT, by D.
A. Kuyk, M. D., Richmond, Va., 419

TREATMENT OF ANTE-PARTUM
ECLAMPSIA, by John P. Winn,
M. D., Richmond, Va., - - - 423

THE RELATION OF EYE STRAIN TO
EPILEPSY, by Drs. M. B. Hods-
kins and G. A. Moore, Palmer,
Mass., - - - - - 428

REVIEW OF CURRENT MEDI-
CAL LITERATURE:

WITH EDITORIAL COMMENTS UN-
DER THE CHARGE OF "AMICUS
CURIAE," - - - - - 433

EDITORIALS:

ANALYSIS OF FAITH CURES, - - 437
TYPHOID CARRIERS, - - - 437
CIVILIZATION AND HEALTH, - - 438

CURRENT LITERATURE, - - - 436

ABSTRACTS:

To Kill Fleas—Shakespeare's Medi-
cal Knowledge—The Dangerous
Hot Water Bottle—A Considera-
tion of the Causes and Character-
istics of the Weak Foot—Scabies
—The Physiological Action of
the Pancreatic Enzymes, with
Special Reference to Hematology,
Urology, and Clinical Pathology
—Enlightenment of the Public in
Medical Matters, etc., - - - 440

NOTES AND COMMENTS, - - - 445

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flects to our eye the green rays which come to it from the sun. Speaking broadly, if it could not reflect the green rays and could not reflect any other, the grass would be black. Color, therefore, does not exist except as the waves of light are thrown back into the eye from the object upon which we look. Waves of a certain length have a certain color. The slowest rays are red, and the quickest visible rays are violet. If an object absorbs and neutralizes all the rays or waves except the very long ones, and these are thrown back to us, we say the object is red. All light and color and every wave has ceased but red. The application of this to diagnosis must be immediately apparent. If a tissue is examined under city gas light, in which the spectrum shows that there is a large excess of red rays, then a tissue, which in daylight would be normal, would, under gas light, appear to be much redder than it really is. The eye accurately reports the excess of red color, and as inflammation increases the ability of a tissue to reflect red rays, the mind instantly says the tissue is inflamed, while, as a matter of fact, it is not the tissue which is inflamed, but, to put it in a curious way, it is the light which is inflamed. It has an excess of red. If a physician is examining tissues under a green light, the tissues have an abnormal and ghastly appearance. Green light, if thrown upon a red surface in sufficient purity, leaves the red without light; therefore, the red appears black. If green rays fall upon a surface which in daylight would be red, the surface cannot respond; therefore, it has no color, and, in the absence of color, it is black.

It is unnecessary to go further in this line of thought, as physicians are already fully aware of the difficulties of proper diagnosis with artificial light.

There are, however, some phases of the subject which are not always given consideration. In the case of an examination of the blood to discover an anemic condition, it should be remembered that, if examination under artificial illuminants is made, with an illuminant giving an excess of red, the condition of the blood appears much better than it really is, and under an illuminant which is deficient in red, the apparent condition of the blood is much worse than it really is.

So important is accurate judgment to the physician and the surgeon that the adoption of acetylene, which is really daylight at night, in the operating rooms of hospitals is almost a necessity. The spectral similarity between acetylene and sunlight has only been recently brought to the attention of physicians, and its advantages were immediately recognized.

The ordinary portable lights like a house lamp, with a suitable reflector, have been adopted and brought into use by physicians who have seen the necessity of acetylene. As a matter of fact, small acetylene lamps of a portable character are in use in 54 out of the 60 public hospitals in New York City. The most eminent physicians connected with these hospitals have spoken of the value of acetylene in the highest terms. The investigation of the matter went no further than New York City, but the large proportion of hospitals in which acetylene is appreciated and in constant use was a surprise to the writer. These minor units do not meet the full requirements of the case. They are convenient because they are movable, and as an accessory to the system of hospital lighting have been proved valuable. There should, however, be in every hospital operating room a complete system of acetylene illumination, proper reflectors should be provided, and whether the

source of acetylene should be the modern house generator or cylinders, which are now used so extensively in railroad illumination, is a question which would be decided by local conditions. A perfect light for emergency operations at night is a desideratum of primary importance, and there should be no hesitation in working out a plan by which the hospital operating room should be given this nearest approach to daylight at night.

Acetylene is within the reach of every physician, and especially those in the country, as an individual household generator is now made by manufacturers in almost every city, which will produce acetylene for lighting an entire house, at a cost, candle power for candle power, which compares favorably with city gas at a dollar per thousand cubic feet. The apparatus and piping are not expensive and can be put into any house by a good plumber in two or three days without disturbing furniture or walls. Over 150,000 individual installations are now located in country homes throughout the United States, so that its safety and utility are completely demonstrated. Many physicians have adopted acetylene as the common illuminant for their homes, and find it of inestimable value in their practice, and of great benefit to their patients.

Acetylene illumination is already recognized of immense value by dye houses, lithographers, artists and others who require an illuminant which will give them the ability to discriminate closely between different shades and colors, and men of the profession will not be slow to add to their equipment so simple an improvement.

ATONY OF STOMACH.—*Nux vomica* is useful, particularly when there is constipation.—*Ex.*

SOME PRACTICAL SUGGESTIONS IN THE USE OF THE PROCTOSCOPE.

BY JOSEPH M. MATHEWS, M. D.,
LOUISVILLE, KY.

MANY kinds of proctoscopes have been devised by men doing work that requires the physical examination of the rectum and colon—some are objectionable, some to be highly commended. The chief point to be kept in mind in making a proctoscopic examination is that serious harm might come of it. More than one death has occurred by traumatic injury to the gut by the instrument. It was first thought necessary to have the proctoscope as long as the distance to the diseased part. Hence instruments made of metal, some of them measuring 21 or 22 inches, were put upon the market.

It can be seen at once, when taking into consideration the anatomical construction of the rectum and colon, that it was a dangerous procedure to attempt to use such an one, especially if any but an expert attempted its use. It must be remembered that the rectum is not a straight tube, and that it is bounded by and related to important organs of the pelvis; that above three or four inches it has no attachments, but floats in space; that it has its peritoneal attachment, and is easily remedied. Then, too, that the sigmoid flexure is bag-shaped and offers resistance to the instrument below and above. It is easy to thus understand that it is no slight job to introduce the proctoscope fully into the descending colon. Experience has demonstrated that it is not necessary to have the instrument as long as was first suggested. Laws was the first to demonstrate that by air pressure the gut could be distended so as to permit its exploration. His proctoscope is much

to be preferred to the use of the long tubes suggested by some—the same good can be had by the use of the Pennington proctoscope. But even the best instruments can be of little avail unless strict attention is paid to the position of the patient fixed for examination. Much has been written and said about this. Martin first suggested that the ordinary positions assumed for rectal examinations would not do for the exploration by the proctoscope. Hence he devised an ingenious table for throwing the patient into what is really the knee-chest position. This has been the position that I have used in my practice until recently. I now place the patient intended for colonic observation in the position suggested by my partner, Dr. Hanes, and find it far better than any other. It is to completely invert the patient over the end of a flat table, his head reaching and resting on the floor. At first thought it would appear that said position would be uncomfortable to the patient—but it is not, and I have seen patients of both sexes rest in this position for fully one-half hour without discomfort. The advantage is that: 1st, all the abdominal viscera are carried out of the way and exert no pressure; 2nd, that the gut is immediately distended by air the moment the proctoscope is introduced. Under these conditions, an instrument seven inches long is quite sufficient. Nor will it be necessary to use an electric light attached to the distal end of the instrument: a head mirror is all that is to be used, either artificial or natural light will suffice.

Having the proctoscope so short as this, we can take advantage of the position and have it larger in circumference, which gives great advantage in many ways. More light is admitted, and larger mops can be used for the purpose of cleansing and medica-

tion. In the treatment of colitis, dysenteries, ulcerations, etc., if these suggestions are adopted, I am sure that they will be regarded as an improvement over other methods. In all cases of suspected auto infection, a proctoscopic examination should be made of the colon. Constipation is frequently due to colonic trouble, and an inspection is necessary: ulcerations, proctitis, etc., cannot be treated successfully in many cases without the aid of the proctoscope.

Hence the writer hopes that these modest "suggestions" may be of some avail to his co-workers in this line.

JEJUNAL ARTERY. (ARTERIA JEJUNALIS.)

BY BYRON ROBINSON, B. S., M. D.,
CHICAGO, ILL.

Professor of Gynecology and Diseases of the Abdominal Viscera in the Chicago College of Medicine and Surgery (in affiliation with Valparaiso University).
Consulting Surgeon to Mary Thompson Hospital.

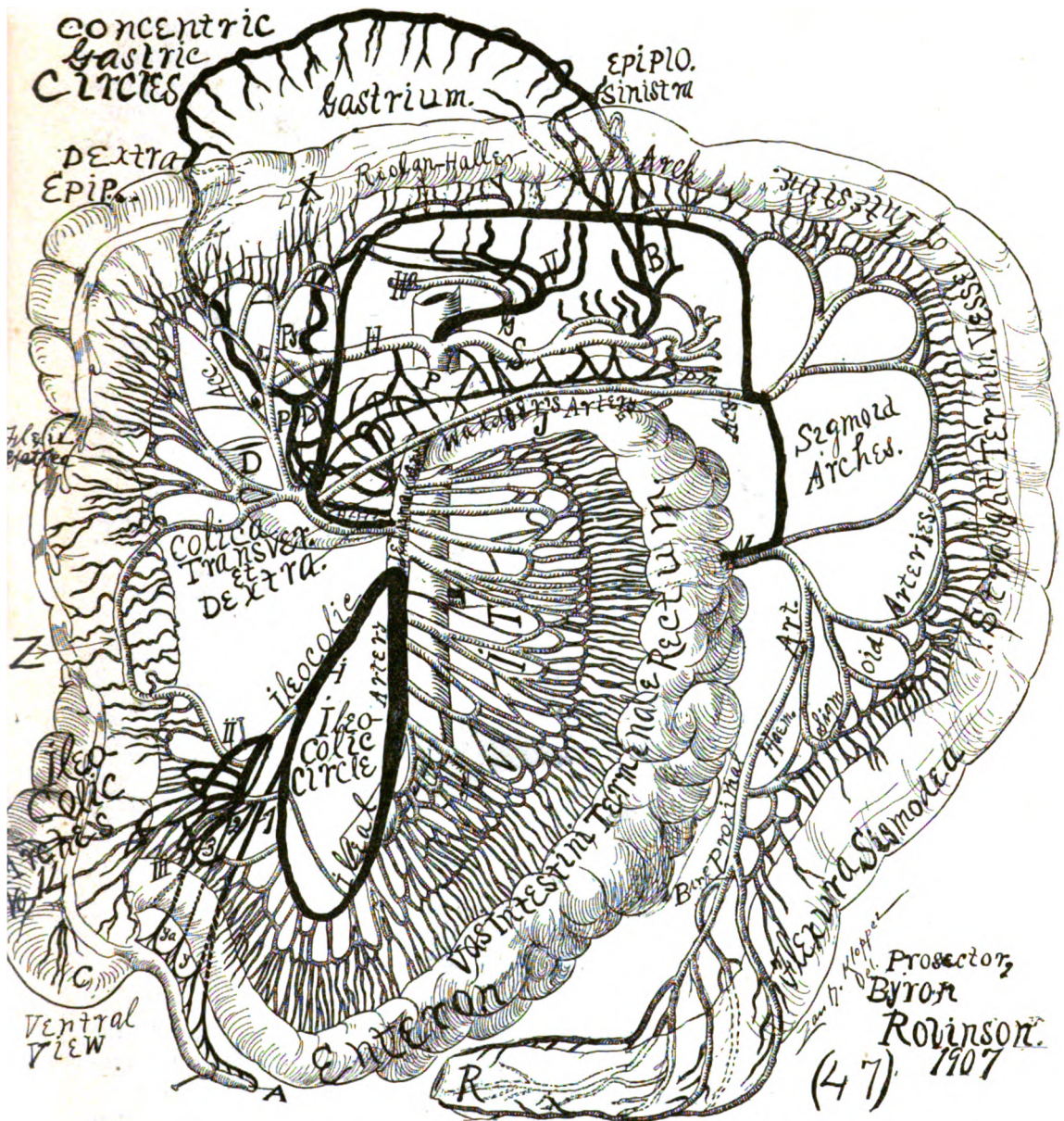
INTRODUCE the term *jejunal artery* as a rational nomenclature for the purpose of designating definite segments of the proximal mesenteric artery. The jejunal artery extends from its origin in the aorta to the origin of the ileocolic artery or to its bifurcation into the ileocolic and jejunal artery.

The "*jejunal artery*" or trunk of the proximal mesenteric artery averages three inches in length and one-third of an inch in diameter. *Location.* The jejunal artery extends from its origin on the ventral surface of the aorta, dorsal to the pancreas, and on a level with the first lumbar vertebra to its bifurcation in the *arteria colica* and *arteria ilei*, in the region of the origin of the distal mesenteric artery. The trunk of the proximal mesenteric artery is identical with the jejunal

artery and the ileal artery begins at the origin of the ileocolic artery. *Anatomically* the jejunal artery is an important landmark from its relation

ment that the jejunum permanently occupies the limited jejuno-aortic angle.

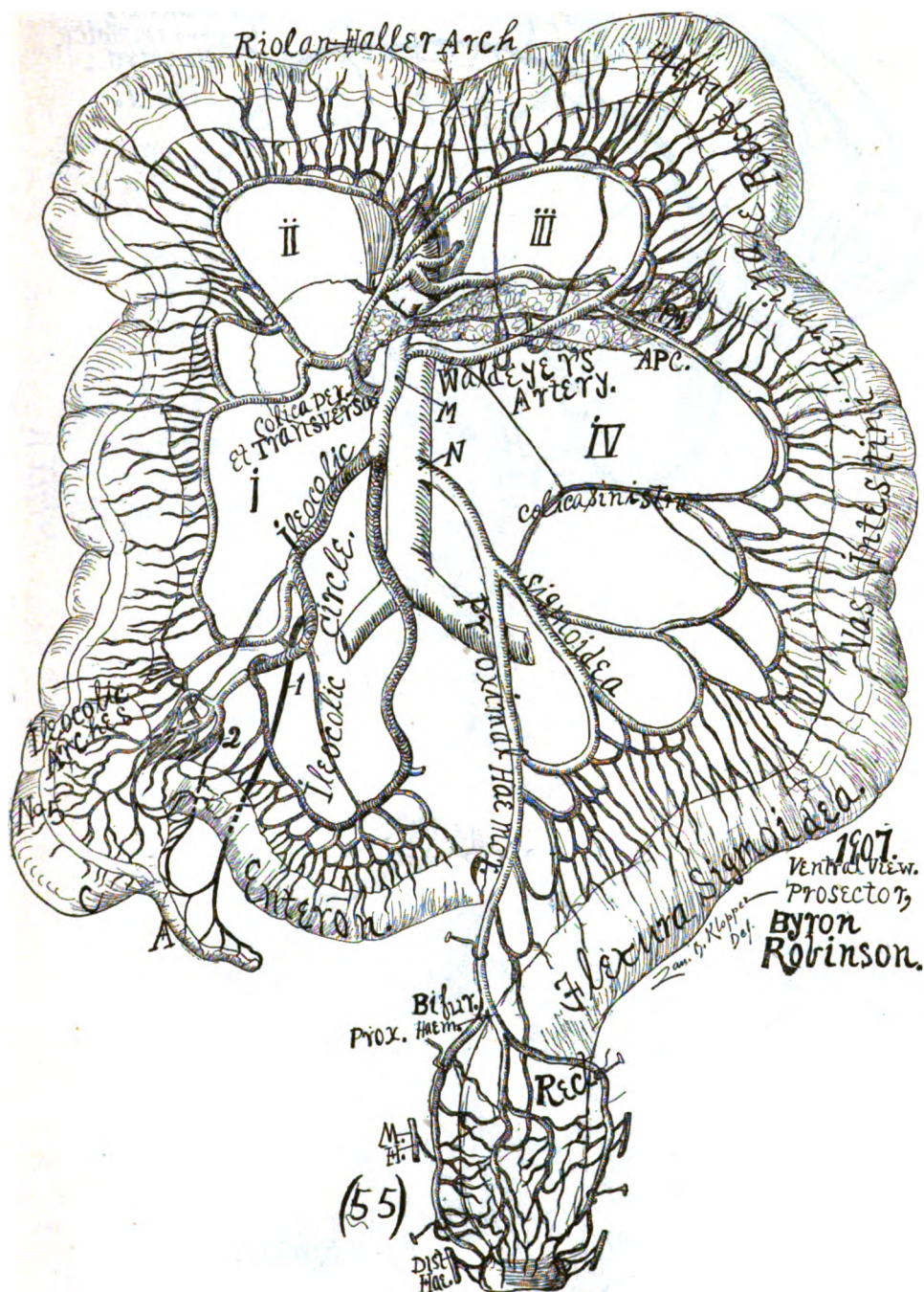
The *functionation* of the jejunal ar-



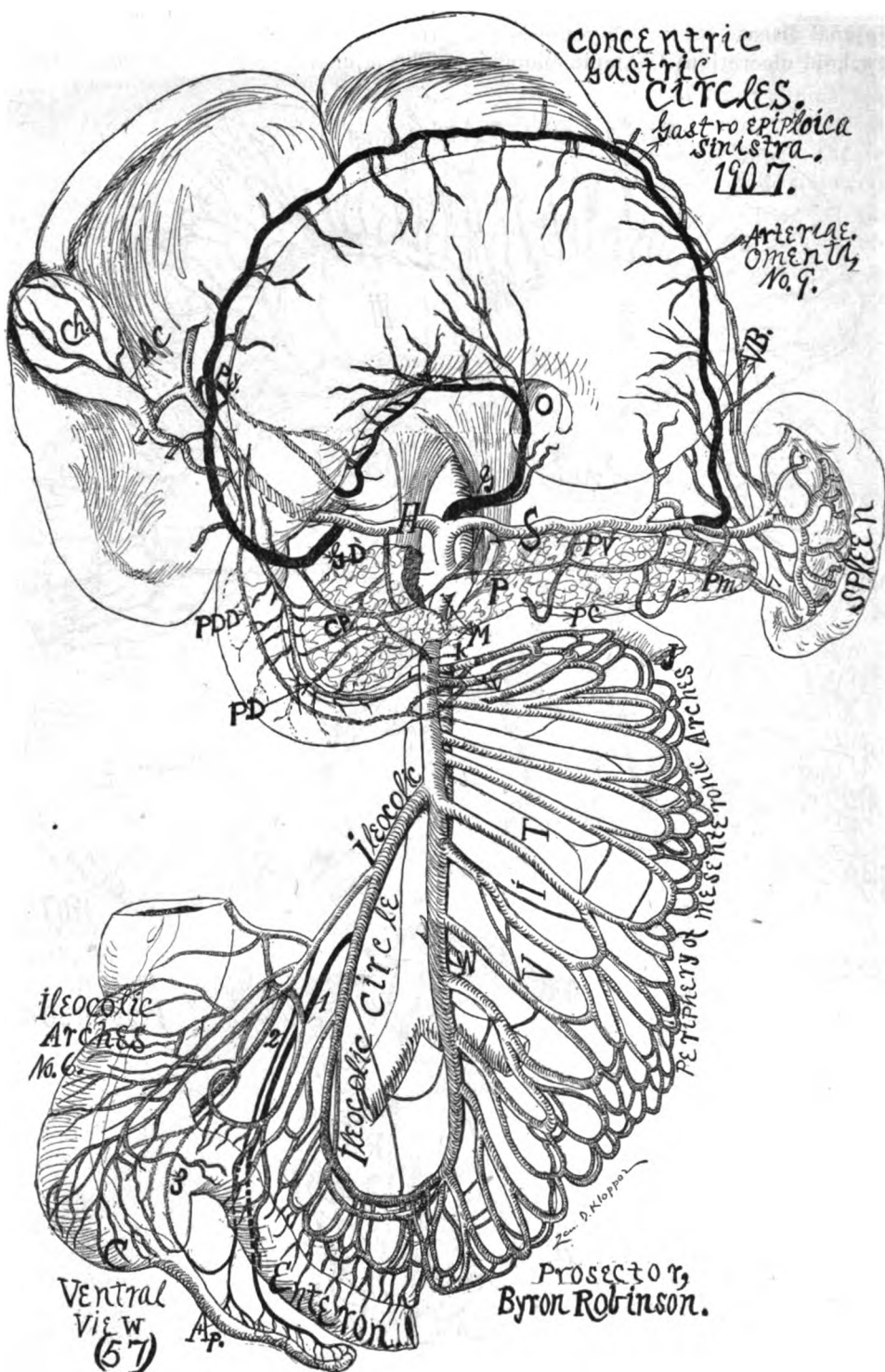
with the duodenum and aorta. It passes perpendicularly over the ventral surface in a groove of the duodenum in such a mechanical arrange-

tery is produced by stimulation of its *automatic* specialized peripheral *ganglia* (Auerbach's and Bilroth-Meissner's) which dilate its peripheral vessels—

jejunal disease (e. g., tuberculosis and the jejunum limited disease attacks it. typhoid ulceration). Ample blood is The jejunal artery is a *diagnostic* and



a prophylactic and cure for disease and on account of abundant blood in surgical guide to the point of obstruction in gastroduodenal dilatation.



artery and ileal artery. The "jejunal artery" (identical with the trunk of the proximal mesenteric artery) emits five rami-jejunaes of maximum caliber transmitting large volumes of blood to the jejunum—eight feet. The maximum blood supply to the jejunum maximizes digestion and minimizes disease. The jejunal artery averages three inches in length. It is significant in gastroduodenal dilatation. Observe the acute jejuno-aortic angle.

Fig. (53.) Ventral view. Concentric gastric circles (in black) reflected proximalward. This illustration presents the jejunal artery (vasa jejunaes—or vas mesenterica proximal) clamping the transverse duodenum. The pancreas and duodenum being fixed to the celiac axis cannot pass distalward hence the jejuno-aortic angle becomes diminished; during splanchnoptosis the transverse duodenum becomes compressed, producing gastroduodenal dilatation.

Fig. (55.) Presents ventral view and the origin of the jejunal artery from the aorta dorsal to the pancreas.

The "jejunal artery" extending from its origin in the aorta dorsal to the pancreas to the bifurcation into ileal and ileocolic arteries is three inches in length. Arteries emerge, in general, from the four quarter circumference of the jejunal artery. The jejunal artery is of significant importance clinically on account of its compression of the duodenum during splanchnoptosis resulting in gastroduodenal dilatation.

Fig. (57.) Ventral view of jejunal artery. The transverse jejunum lies in the jejuno-aortic angle and may be compressed during splanchnoptosis producing gastroduodenal dilatation.

Fig. (59.) Ventral view. The *jejunal artery* extending from its origin in the aorta, dorsal to the pancreas to its bifurcation into the ileocolic and

ileal arteries emits five rami-jejunaes horizontalward to supply the eight feet of jejunum. The rami-jejunaes are of maximum caliber transmitting a maximum blood volume which acts as a prophylactic and cure for jejunal disease. Maximum digestion and maximum blood supply occur in the jejunum—with the least disease. The jejunal artery by compression of the duodenum results in gastroduodenal dilatation.

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Selected Original Articles

THE SIGNIFICANCE AND TREATMENT OF UTERINE HEMORRHAGE.

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THE history of gynecology is accentuated by progress. In glancing over its pages the student is astonished at the rapid strides made to alleviate the ills of womankind. It is a chapter written within the present century, and written with glowing pen and on emblazoned paper, recording the daring of Ephraim McDowell, of Kentucky, who in 1809 performed the first laparotomy on a poor woman from the wilds of the blue grass state, without anesthesia, an event which marked the beginning of intrapelvic gynecologic surgery.

Perhaps the brightest page in this chapter contains the wonderful discovery of Crawford W. Long of Georgia, who on March 30, 1842, used ether for the first time as an anesthetic, while operating on James Venable, from whose neck he removed without pain a large tumor—robbing,

for all time, the operating table of its dreadful horrors. Another page in this chapter records the brilliant labors of Marion Sims, a native of South Carolina, who in 1845-9 described for the first time his operation for vesico-vaginal fistula." He also gave to the profession the duck-bill speculum which bears his name, for the exposure of the fistula with the patient lying in the left semiprone position. Elsewhere in the same chapter we find a description of Battey's operation first performed by Robert Battey, of Rome, Ga., who on August 17, 1872, performed the first oophorectomy in this country upon a nervous, hysterical woman whose menstrual periods, prior to the operation, almost drove her to madness. This operation was successful, adding years of joy and happiness to his former invalid patient.

New operations, improved surgical technic, and new therapeutic remedies have been the means of giving the suffering woman a new lease on life. These new methods and measures must usurp the attention and command the co-operation of every thoughtful gynecologist. He must forsake his ultra conservatism and pay due homage to whatever in his experience has most abundantly redounded to the amelioration of the ills of suffering woman.

The gynecologist should be a good listener, that he may fully grasp the importance of the symptoms which his patient confidently recites. He must be able to judge human nature in order to carefully weigh the evidence submitted and correctly interpret its bearing on the case. When a woman comes for consultation and gives a history of uterine hemorrhage, we should be very thorough in our interrogatory examination, since bleeding from the uterus is one of the most common complaints for which the

physician is consulted. The causes are numerous and the diseased conditions manifold.

This paper is intended to be intensely practical and the writer hopes his labors may be of some help to his fellow practitioners, and thereby benefit womankind. If we succeed we shall feel amply repaid for the time and labor spent in its preparation. In considering the treatment of uterine hemorrhage, we have before us a subject of momentous importance and one requiring much thoughtful study. Hemorrhage from the uterus may indicate:

Adenoma Malignum.—Here the hemorrhage is less profuse, the discharge is less abundant, the odor less offensive than in cancer.

Cancer of the Body of the Uterus.—Here the bleeding may be intermittent and copious or constant and dribbling.

Cancer of the Cervix.—A persistent watery discharge tinged with blood, usually associated with fetor; later, profuse and violent hemorrhage may occur.

Deciduoma Malignum.—In this condition there is intermittent hemorrhage, usually severe, followed by an offensive, turbid watery discharge,—blood-clots may be found.

Ectopic Gestation.—Agonizing pain, faintness and collapse are indications that the tube has ruptured and violent hemorrhage present.

Endometritis.—This begins with a dull, aching pain accompanied by purulent and oftentimes bloody secretion, menorrhagia and metrorrhagia being common.

Fibroid Polypi.—Here will be found a profuse, purulent discharge; menorrhagia with colicky or propulsive pains, the bleeding dribbling or severe flooding.

Fibroid Sarcoma.—In this there may be a torrential hemorrhage occurring

with alarming suddenness and severity, or there may be only a continual dribbling as in cancer of the body of the uterus.

Inversion of the Uterus.—Here the hemorrhage is very profuse accompanied by a dragging or pulling sensation.

Lacerated Cervix.—In this condition the hemorrhage is usually slight.

Oophoritis (chronic)—This condition is attended by menorrhagia, especially in cystic ovary, which gives rise to a most intractable form of uterine hemorrhage.

Ovarian Cyst.—In this as in cystic oophoritis, menorrhagia and metrorrhagia are common.

Retrodisplacements. — Menstruation usually profuse with aggravated reflex disturbance in these conditions.

Salpingitis.—In this there is increased frequency and duration of menstruation, bloody discharge accompanied by pain, quick pulse and persistent elevation of temperature.

Simple Cysts of Ovary.—Here, too, there is occasional hemorrhage and metrorrhagia.

Subinvolution of the Uterus.—In this condition the symptoms are backache, anemia and malaise, depression of spirits, profuse menorrhagia.

Uterine Fibroids.—In these the symptoms usually are pressure, pain and hemorrhage either at or in the intervals of menstruation.

Uterus, prolapsus of.—There is pelvic pain, with weight and dragging sensation in acute prolapse, then, when the ligaments are torn, profound shock and agonizing pain attended with internal hemorrhage.

The above are a few of the diseased conditions that we will be called upon to treat which will be accompanied by uterine hemorrhage. Some of these cases will be easily diagnosticated and yield readily to treatment while others

will come to us in which no abnormal signs can be found on physical examination, and in which treatment will prove extremely unsatisfactory. Still there are other cases which can be cured only by surgical intervention. Many of the patients presenting themselves for consultation will be women between 25 and 35 years of age,—a period of life when the menstruation should be regular and normal. In many of these sufferers, beyond a slight enlargement of the uterus and a somewhat toneless condition of the uterine muscle and appendages, there is nothing abnormal which can be discovered on the most painstaking careful bimanual examination. While operative gynecology has made rapid advancement saving the lives of many women, the non-surgical conservative workers have been "up and doing." Scientific pharmacologists and chemical laboratory workers have greatly aided the conservative gynecologists.

Whatever may be the correct interpretation of the pathological changes present in uterine hemorrhage, the fact remains that the control of the bleeding is often a very difficult problem, especially in those cases unsuitable for surgical intervention, and the drugs which we have at our command for the control of hemorrhage often prove disappointingly unsatisfactory. Frequently cases come under observation in which the usual hemostatics and styptics, such as ergot, hydrastis, hamamelis, gallic and tannic acids, persulphate of iron and other drugs of this type have been used without even the slightest signs of alleviating the hemorrhagic flood. The cervix has been dilated, the endometrium curetted and still the patient bleeds. In the past, in such cases, the woman had to give up her organs or bleed to death. The writer recalls a patient who literally bled to death, ten years ago, be-

cause she refused hysterosalpingo-öphorectomy—the only chance of saving her life.

Conservatism in gynecology has been a stimulus to the broadening of therapeutic effort and has saved countless numbers of women from needless sacrifice of organs and other surgical mutilations that in so many instances failed to bring relief. We are sometimes compelled to remove a uterus because of our inability to check uterine hemorrhage permanently, as its recurrence is often to such an extent as to greatly endanger the life of the patient, and when the organ has been extirpated the pathologist will open his eyes in surprise to see how comparatively trifling the organic changes will be. If uterine hemorrhage occurs after parturition or abortion, we know the cause—faulty contraction of uterine muscular fiber. The open bloodvessels gape through the atony of the muscle and we all know that any remedy which causes firm contractions of the uterine muscle will stop hemorrhage. A uterus infiltrated by small fibromyomata, or which is chronically inflamed, is an entirely different case. In such cases an abnormal growth of tissue is present, a growth which compresses the muscular fibers, hindering them from contracting with sufficient force to control arteriosclerotic ones which gape wide open in spite of muscular contractions, due to the rigid surrounding connective tissue.

In these cases, only such remedies are worth the while, except those which act independently of muscular contraction. Dr. Abel of Berlin (1) says he has had occasion to examine microscopically uteri which had been removed on account of uterine hemorrhage when all other treatment had failed. He avers on examining these uteri he has observed that the capilla-

ries are greatly dilated in the mucous membranes which have been the seat of severe hemorrhage, therefore he declares that ulcerative processes were present exposing the vascular loops on the surface of the uterine mucous membranes.

We can readily understand how such uteri become the seat of extensive hemorrhage and that this bleeding can only be controlled by a remedy which influences the vasomotor nervous system directly, promptly counteracting the irritation that induces the dilatation of the capillary vessels. Such a remedy is the neutral phthalic acid salt of cotarnin.

Cotarnin was discovered by Woehler (2) who obtained it by the oxidation of opium alkaloid, narcotine, by means of manganese dioxide and sulphuric acid.

Pharmacology.—Cotarnin phthalate is a yellowish micro-crystalline powder containing 75 per cent. of cotarnin. It is readily soluble in water with a feeble alkaline reaction. Its melting point is 113° C and it is represented by the formula— $(C_{12}H_{16}NO_3)_2C_3H_6O_4$. It contains two active hemostatics, as not only the cotarnin is noted for its hemostatic and sedative action, but valuable styptic properties are also claimed for the phthalic acid. According to Lockyer (3) cotarnin is chemically related to hydrastin, the latter containing stypticin, the hydrochloride of cotarnin.

Physiological Action.—Cotarnin phthalate exerts no action on normal bloodvessels, nor does it produce a rise of blood pressure, but its action in the main is directed to the capillaries dilated by inflammatory changes. Its physiological action on the uterus has been studied by Mohr (4) and Abel of Berlin and by Chiappe and Ravano in Boss's Clinic at Genoa (5). These investigators agree that cotarnin dis-

plays not only a powerful hemostatic, but also a sedative action. It might be supposed that as a derivative of opium it would depend for its hemostatic action upon central causes, but Vieth and others aver that this is not so; since the drug does not occasion a general rise in blood pressure; he regards the uterine hemostasis as a purely local action, and supports this view by the statement that when used externally it causes hemostasis by vasoconstriction.

Quoting from Lockyer he believes that after absorption by the blood "cotarnin has the peculiar property of causing constriction of the urogenital vessels only, this action he avers is caused by the stimulation of their local vasomotor plexuses. Cotarnin does not affect normal vessels in other parts of the organism, hence a general rise in blood pressure does not occur. While its action is very prompt in the arrest and control of uterine hemorrhage yet it does not allay the bleeding in hemoptysis and hematemesis.

Toxic Effects.—After the administration of a lethal dose says Abel and Mohr, there first appears a sedative effect, exactly as with small doses, but this is soon followed by excitation, which is preceded by inco-ordination and ataxia of the extremities. This excitation is rapidly followed by respiratory and general paralysis and death. Just before death the number of respirations rapidly decrease and the breathing gradually becomes superficial. To produce poisonous effects very large doses must be given and Mohr has proven that gangrene cannot be set up by the continuous exhibition of this drug.

Therapy.—Mohr's experiments on pregnant rabbits establishes the fact that the uterus is rendered less sensitive to stimulation by the sedative action of cotarnin. This reduction in

the excitability of the uterine nerves is an indication of its employment for the relief of spasmodic and congestive dysmenorrhea, and from the mass of clinical evidence collected by competent clinicians it establishes the opinion that in it we have a drug which fulfills a unique position in therapeutics, and one which can be safely given in threatened abortion. If the deductions of the German clinicians as to the physiological action of cotarnin are correct, and we believe they are, then in this drug we have a substance which has a special selective action upon the uterine nerve plexuses, which action produces a local vasoconstriction, at the same time, from its sedative action, pain is relieved. As it causes no contraction of uterine muscular tissue it is not indicated for the relief of post-partum hemorrhage, nor for any pathological condition where it is necessary to secure continuous retraction of uterine muscle.

The first clinical research into the therapeutic application of this drug was carried out by Katz (6) in Professor Karl Abel's clinic in Berlin. He and Abel enunciated the following deductions, dose three to five grains daily in original sugar-coated tablets, and the following indications for its use were laid down. After an experience of several years, in more than 300 cases, Katz and Abel recommended it in the following cases, namely:

1. Severe menstrual hemorrhage in virgins and nulliparæ without a pathological-anatomical cause.
2. In purely climacteric hemorrhage.
3. In puerperal hemorrhage.
4. In myomal hemorrhage, especially in cases suitable for operations; the patients, generally enfeebled by the recurring attacks of menorrhagia

are able to recover their strength when the bleeding is held in check by cotarnin phthalate.

5. In secondary hemorrhage in diseases of the appendages, or of the pelvic cellular tissue. (These are the cases where success is least certain, for many cases of this type are amenable to no other treatment than the removal of the actual cause of hemorrhage by surgical intervention.)

6. In hemorrhage due to inoperable carcinoma, in which the local application of the remedy has also been used.

7. In dysmenorrhea, when not due to mechanical causes. Because of its double sedative and hemostatic action, this drug is a safe remedy for painful and prolonged menstruation. The sedative action is hardly ever absent, provided the remedy be given in sufficient doses,—two tablets three to four times a day.

8. In hematuria,—bleeding from the genitourinary tract.

Abel in closing his paper, published in *Berliner Klinische Wochenschrift*, 1905, No. 34, summarizes as follows: "I believe that in the neutral phthalate of cotarnin, (styptol*), we have gained a preparation which surpasses all former hemostatics employed in gynecology, provided the indications and dosage are right, whether administered internally, locally, or by a combination of both methods. Here I should like to mention once more that the remedy possesses a pronounced sedative effect which makes it especially valuable in gynecological practice." He quotes Freudenberg who is of the opinion that styptol cannot always replace ergotin; on the other hand, Professor Toff (8) observes that ergotin, and powdered ergot, have been often proved unsuccessful, while styptol has

always shown a reliable hemostatic effect. He even believes the time is not far distant when ergot preparations will lose their reputation just as they have long ago been given up as abortifacients for which they were used for decades. Weissbart (9) praises the action of the drug in climacteric and reflex hemorrhages, endometritis, subinvolution of the womb after parturition and miscarriage, and hemorrhages during pregnancy. Styptol never causes uterine contraction nor labor pains, an observation made by Freudenberg (10) which is in perfect accord of other German authors.

More than two years ago my attention was first drawn to this drug, as a remedy for the control of uterine hemorrhage. During that time I had occasion to observe its therapeutic action both in private and dispensary practice. My service, in one of the largest clinics for the diseases of women in the city of New York, has given me exceptional advantages for the study of this drug. I believe as is claimed by the German clinicians, that the special action of the drug is principally on the capillary circulation, and that it has the power of contracting these dilated blood vessels, in this way cutting short local congestion.

I have clinically tested the therapeutic properties of cotarnin phthalate for the arrest and control of uterine hemorrhage, and append hereto a few clinical histories taken at random from my note-book which will serve to illustrate the value of this drug in the treatment of uterine hemorrhage.

In December, 1905, I was called in consultation to see Mrs. S., aged 32, she first menstruated in her fourteenth year, was always regular as a girl, but suffered a great deal of pain during the periods, which were very profuse, married twelve years, two children and two miscarriages,—the last, two years

* Styptol has been approved by the council of Chemistry and Pharmacy of the A. M. A.

ago; since then, her periods have been painful and alarmingly profuse, lasting sometimes from six to ten days, passing clots and suffering from frequent micturition; bowels constipated. Vaginal examination revealed a large and bulky uterus, slightly anteflexed, cervical catarrh, nil in fornices; diagnosis, endometritis metrorrhagia. Curettage advised but refused; patient was then placed on cotarnin phthalate, one tablet three times daily and advised to continue it until the next period, which she did, and after three months she reported freedom from her former ills.

Millis S., aged 31, menstruated first in her twelfth year; regular for the first two years, then came a period of eighteen months during which she was very irregular. Acute ovarian pain preceding each period, beginning five or six days before and continuing for the first three days of the flow, which was very profuse and weakening to the patient. This case was first observed in February, 1906. Bowels constipated, micturition normal, appetite peevish, sleep disturbed. Vaginal examination revealed a slightly enlarged uterus freely movable but tender bimanually, some cervicitis with a slight erosion. Diagnosis dysmenorrhea with menorrhagia. A curettage was performed by her physician during the early part of the preceding month. I was called again in April, the same year, and found patient suffering with a return of her former symptoms. She was displeased at her condition and bewailed her plight after undergoing an operation which had been promised as a relief to her sufferings. She was placed upon neutral phthalate of cotarnin,—one tablet four times daily,—which was continued right along through the next period and until the next succeeding catamenia, both

of which she passed through without any trouble or inconvenience.

Rebecca S., colored, aged 30 years, menstruated first at twelfth year, regular for several years following; married three years, no children, no miscarriages. When I first saw her in April, 1906, she was complaining of headache, pain in her back, leucorrhea very profuse during intervals between periods, vaginal examination revealed uterus anteflexed, the sound glided in two and one-half to three inches, tip turning to the front. On bimanual examination a small mass was made out between the folds of the broad ligament on the left side; this mass was diagnosed as a fibroid about the size of a small tangerine orange. Knowing the predisposition of her race to fibroids, she was placed on a tonic treatment and kept under observation. In July, same year, the second examination found the tumor much larger, firmly fixed laterally, but slightly movable in the vertical; acute pain in the left iliac fossa gave her considerable annoyance; she suffered nausea and vomiting during these attacks of ovarian pain; menses very profuse, occurring irregularly at periods varying from two to six weeks and lasting from six to eleven days. She was at once placed upon tablets of cotarnin phthalate, receiving four a day and after four months' treatment pain was very slight; menses about normal; size of tumor, slightly diminished; patient better.

Mrs. K., American, aged 38, menstruated first in her seventeenth year, usually regular, married twenty years, ten children and eight miscarriages,—the last miscarriage eight months previous—since which time she has suffered from a continuous metrorrhagia; bowels constipated, appetite fickle, sleep disturbed, micturition frequent

and irritating. In March, 1907, I examined this patient vaginally and found the cervix lacerated, hardened and enlarged, uterus enlarged circumferentially, left ovary prolapsed and very tender, left tube a boggy mass. Diagnosis salpingo-ophoritis; operation advised but refused; bleeding ceased after the administration of the neutral phthalate of cotarnin, one tablet every six hours for a period of four weeks. Of course in this instance the bleeding was controlled, but the diseased condition remains uncured.

Fannie R., German, aged 34 years, menstruated first in her fifteenth year, always regular, married thirteen years, two children, and six abortions; bowels constipated, appetite poor, sleep normal, micturition normal, complained of severe backache, pain over ovarian region, a bloating of lower abdomen and a continuous loss of blood since last abortion. On vaginal examination found vagina relaxed and enlarged, uterus mobile, os soft and gaping, ovaries tender. Diagnosis, subinvolution with metritis. Ordered woman to bed, turpentine stupe to abdomen, hot sterile douches at bed time and cotarnin tablets, one every six hours. After two weeks the bleeding began to subside and at the end of one month the loss ceased and did not recur.

These few examples of a large series of cases extending over two years of practice, suffice to show the value of cotarnin phthalate (styp tol) to be a most favorable one in bleeding from the uterus. I have prescribed the drug chiefly in the disorders of menstruation, including dysmenorrhea, menorrhagia, and metrorrhagia, metritis and endometritis and other congestive lesions of the womb. The experience of others, as well as myself, proves that in this drug the gynecolo-

gist has a reliable remedy for the control of uterine hemorrhage.

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THE USE OF FAT-FREE MILK IN INFANT FEEDING.

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Read before the Suffolk District Medical Society,
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ANY suggestion which simplifies infant feeding or renders the management of cases of indigestion and diarrhea in infancy easier, is certainly worthy of consideration, for it is a noteworthy fact that the general practitioner is prone to shirk the careful study which a thorough conception of scientific percentage feeding entails.

For a long time the proteids of cow's milk have absorbed much of the attention of specialists in infant feeding, and it has been thought that once these proteids were thoroughly understood and modified to resemble the proteids of mother's milk, the problem of infant feeding would be largely solved.

Curds in infant stools are generally regarded as evidence of faulty proteid digestion, for it is thought that the cheesy part of the milk, in-

stead of being digested, is curdled and passed through the gastro-intestinal tract. Whenever these curds occur, efforts are made to modify the proteids which are considered to blame. In working out this problem, whey, which lacks the caseinogen so largely in excess in cow's milk has been used, as well as the apparently more scientific but more complicated split proteids, where the same relative proportions of soluble lactalbumen and the caseinogen may be prescribed as in woman's milk.

While the proteids have been studied so carefully, the fat in the mixtures for infant feeding has, on the other hand, often received but scant attention. This, I believe, is due to the fact that the fat of cow's milk, and of woman's milk both occur in about the same proportion to the total bulk, and no differences in the quality of the ingredients are recognized by the practitioner as is done in the case of the proteids. The quantity of the fat is borne in mind, but the quality is not considered, yet it has been shown, as by Stern,* "that the composition of the fat of cow's milk is greatly at variance with that of the fat of human milk, differing especially in its far greater contents of volatile fatty acids, among which butyric acid is most important." He finds from six to eight times as much of these fatty acids as in normal woman's milk, a fact that easily explains some, at least, of the relative indigestibility of cow's milk.

Another interesting fact is the one discovered by Luzzatti and Biolchini, namely, that there is a more active fat-splitting ferment in woman's milk than in cow's milk.

Although the value of fat as a food is generally recognized by the practitioner, it is often regarded by him more in the light of a laxative, and,

if the bowels are constipated, he is apt to increase the percentage of this ingredient without hesitation. That excess of fat is often a cause of constipation is rarely recognized. Such, however, is the case, and stools are passed that are hard, dry, large, and of a grayish white color, showing a greasy surface when rubbed smooth. In these stools there may or may not be found hard curdy masses like cheese which are often thought to be made up of proteids, but are in reality masses of fat. A diminution in the amount of fat in the food in these cases will often relieve the constipation, much to the surprise of the physician, whose only idea previously had been to increase the fat for its laxative action. Too little fat, it must be borne in mind, will also cause constipation, so that a happy mean for each case is desirable.

Excess of fat is often a cause of gastric disturbance as shown by vomiting, and of intestinal indigestion resulting in the fatty stools just described, and in a failure to gain properly in weight. The infant may even become atrophic. Infants fed with an excess of fat are often ravenous at their meals—they are starving in the midst of plenty—and the physician is tempted to increase the strength of the food, especially in fat, with increased trouble for the little patient. Grave general disturbances, as shown by eczema, rachitis, or even convulsions, may occur in infants thus overfed. It must always be borne in mind, however, that what is a proper amount of fat in the food in one case may be excessive and the cause of considerable disturbance in another. No cast-iron rule can be made for infant feeding.

The quality of the fat of Jersey and Guernsey milk, aside from its quantity, is in some infants often a cause of di-

* Archives of Pediatrics, June, 1905.

gestive disturbance. I have many times seen babies gain but slowly and show fatty stools on Jersey milk modifications, even when the percentage of fat was low, while the same babies gained rapidly and digested well the modifications having the same amount of fat, made with the milk of Ayrshire, Holstein or common red cows. Another cause for the difficult digestion of fat is sometimes seen where centrifugal cream is used, and a simple change to gravity cream often obviates the difficulty.

While we must all admit that fat in the normal infant's food is a very desirable and a very necessary ingredient, another problem presents itself when the infant's gastro-intestinal tract is disturbed, and unable to properly dispose of the food. Here our object is to feed the infant in such a way that the stomach and bowel disturbance will subside as quickly as possible, so that the infant can digest a proper amount of food. A simple and satisfactory treatment is the substitution of barley water for milk, followed by the gradual resumption of this important fluid. In this resumption the proteids, especially, are at first given cautiously in small amounts, often in the form of whey or as split proteids, for the proteids are generally believed to be the most difficult part of the milk to digest,—the chief offenders, as it were. A number of recent writers have, however, come to the conclusion that the fats and not the proteids are the chief offenders, as I have already hinted, and Walls* in a recent paper goes so far as to make the following statements:

"There is no evidence that the proteid of cow's milk causes any digestive disturbance in the infant;" and "all experiments prove that cow's proteid

is easy to digest and resists putrefaction."

Such extreme views are little short of revolutionary. In order to test them, however, I fed, with but few exceptions, all the babies suffering from gastro-intestinal troubles, in my recent service in the Boston Floating Hospital, on fat-free milk. I am greatly indebted to Dr. W. P. Lucas, my senior house officer, for his careful study and analysis of these cases. My service began early in August, and I found the wards, containing 50 beds, full of infants fed on various modifications of milk, milk and barley water, split proteids, buttermilk and condensed milk. The diet of these was changed more or less gradually to fat-free milk and barley water. New cases, entering with the usual symptoms of diarrhea with curdy and mucous stools, with or without vomiting, and with or without a septic temperature, were given calomel or castor oil to clear them out, and were put on barley water and fat-free milk. In about one-third of the cases the proportion of fat-free milk to barley water was one in ten at the outset, and the strength was increased daily. The remaining two-thirds of the cases were begun at once on equal parts of barley water and fat-free milk, or on fat-free milk alone without any diluent. 85 cases in all were treated.

Much to my surprise I found that undiluted fat-free milk, that is to say, milk containing four per cent. of proteids and four per cent. of sugar, but practically no fat, was well digested even by very young infants, so that during the latter part of my service, instead of cautiously giving them much diluted fat-free milk, I began at once on whole fat-free milk. For example, James P., four weeks old, weighing six pounds, ten ounces, entered the hospital August 29th. He had not been

*The Digestion of the Proteids of Cow's Milk in Infancy." Frank X. Walls, M. D. *Journal of the American Medical Association*, April 27, 1907, p. 1389.

thriving on various milk mixtures, and for two days had had foul smelling, green and watery movements, and had vomited after every feeding. To put such an infant on four per cent. of proteids would seem to be most unwise, yet he was given nothing during his fifteen days of stay but undiluted fat-free milk, and he did well. He stopped vomiting at once, took the fat-free milk eagerly, his stools became normal fat-free milk stools, and he gained weight, a total of thirteen ounces, during his fifteen days in the hospital.

Another striking case, which, like the one just described, would seem to show that even young infants can easily digest the four per cent. proteids of cow's milk, provided they are not burdened with the fats, is that of a fourteen weeks' breast-fed infant. This child had had diarrhea for five weeks, and had vomited frequently. No improvement had occurred while he was under treatment as a day patient, and was taking the harbor trips. Admitted to the wards he was at once put on undiluted fat-free milk. The vomiting ceased and the character of the stools changed from green, curdy and slimy to the normal fat-free milk stools.

The appearance of the stools in infants fed on fat-free milk is very characteristic and easily recognized. The stools are yellowish brown. They lack the bright yellow color of normal milk stools, and the white color of stools in which there is an excess of fat. They have almost an opalescent appearance. Their consistency is their most striking feature, as it is smooth and salve-like, and free from lumps or curds. In other words the curds one would expect to find from the excess of proteids are conspicuous by their absence. The odor of these stools is very slight, certainly not offensive.

One day numerous small curds appeared in the stools of the infants fed on fat-free milk, and the infants all did badly. Under the microscope the white masses were found to be made up chiefly of bacteria, and on investigation it was discovered that the fat-free milk contained over a million bacteria per cubic centimeter. When the milk was sterilized the trouble ceased.

That fat-free milk appears to be as a rule bland and unirritating, even when a high temperature denotes septic absorption, the following cases show:

Gertrude W., six months old, entered on September 5th, with the history of diarrhea, vomiting, fretfulness and lack of appetite for five weeks. Dejections seven a day, green and watery. She was given castor oil and put at once on undiluted fat-free milk, notwithstanding the fever and gastrointestinal symptoms. Her septic condition was shown by an irregular fever ranging from 99° to 103°. The temperature reached normal on the eighth day, and the following note was made by Dr. Lucas: "Is doing very well in every way; movements are improving slowly and the appetite is fairly good."

George M., seven months old, had had green, slimy or curdy stools for two weeks, and had been feverish. The child was given castor oil and put on undiluted fat-free milk. The stools became yellow and salve-like on the fourth day, but the temperature did not reach normal until the ninth day. There was, however, a complicating bronchitis.

The probable explanation for the curds that were found in the stools of these infants while they were taking a food containing fat, and their absence when they were taking a food free from fat, although high in proteids, seems to be that the curds are due to fat and not to proteids.

Milk that is practically fat-free can be obtained only by the centrifugal process. This contains less than one-half of one per cent of fat. In private practice, where this is not so easily procured, I have used with satisfaction milk from which all the cream was removed by means of the Chapin dipper or by the siphon. This milk, however, contains one per cent. or more of fat, and it is to that extent liable to occasion trouble in a susceptible case. In mild cases of gastro-intestinal disturbance I have found that a moderate diminution in the amount of fat is often all that is necessary. This can be obtained by using whole milk instead of cream in the mixture, or by using milk from which the top few ounces have been poured off.

The ease with which the proteids appear to be digested by even young infants is certainly interesting and suggestive.

An infant fed on too low proteids is at a disadvantage, as shown by anemia, slowness in gaining weight, fretfulness, a tendency to intestinal indigestion and to infection. Yet many infants are condemned to their low proteid diet on account of the difficulty they have of digesting, not the proteids, but the fats that go with them. The use of dilutions or modifications of weak creams instead of the strong creams, so commonly advised, and the earlier recourse to undiluted cow's milk would, in the light of these studies, appear to be a more rational procedure.

Exact imitation of the percentages in woman's milk is far from being the solution of infant feeding. We must take heed lest we worship the fetish of percentage feeding too blindly, for, no matter how cleverly we calculate the fractions, or how nicely we split

the proteids, the resulting mixture is still cow's milk and not woman's milk.

In conclusion, as a result of these preliminary studies, it may be said:

1. That while fat is very necessary to the normal infant, it is more often given in excess than is generally supposed.

2. Excess of fat may cause one or more of a number of symptoms, as, for example, constipation, white and "curdy" stools, a ravenous appetite with atrophy, convulsions.

3. In gastro-intestinal disturbances it is desirable to exclude fat.

4. The proteids of undiluted fat-free milk appear to be remarkably well borne even by young infants, and there is an absence of so-called curds from the stools.

Boston Medical and Surgical Journal.

DEVIATION OF THE NASAL SEPTUM; SOME OF THE DISTURBANCES — ITS CAUSES—TREATMENT.

BY D. A. KUYK, M. D.,
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Read before the 38th annual session of the Medical Society of Virginia, at Chase City, November 12-14, 1907.

FOR years past the professional press has been filled with papers narrating in detail the many evils of eye strain, and attributing to it all manner of ills, from the mild migraine to the most violent epileptic seizures, until the general profession, and through them the laity, have become accustomed to ascribe head pain of every kind to uncorrected eye strain, forgetting that there are other organs which, when diseased, are just as likely to excite it. Assuredly eye-strain is a most potent factor in exciting headaches and other manifestations of derangement of the nervous system,

but it is not responsible for quite as much as is charged to it. The tendency to indict this organ, and to seek no farther for other possible trouble has gone too far. Not infrequently the most carefully refracted cases continue to suffer from headache, possibly in increasing severity—glasses and medicine to the contrary notwithstanding. Not all the pain that racks the brain is due to uncorrected eyestrain. We must then look further afield for the origin of the apparently inexplicable, but persistent, headaches that torture our patients.

Obviously it is impossible for the general practitioner with the endless variety of cases that daily come to him to remember with unerring accuracy the symptoms arising from each and every diseased organ. So it is that in the effort to ascertain the cause of some of the perplexing headaches your attention is invited for a few minutes to a study of "Deviation of the Nasal Septum; Some of the Disturbances; Its Causes and Its Treatment." The ideal nose, which must be perfect in contour without and absolutely normal in structure and function, is like the perfect eye—exceedingly rare.

The quotation of statistics, except to the specialist, is always tiresome and not very convincing; so they will be omitted. A detailed description of the several varieties of septal deflections will also be omitted, for the symptoms are much alike, varying only in degree proportionately to the extent and situation of the deflection.

It must be of interest to all medical men to inquire into the causes that produce deviation from the nasal septum. Probably all of us have observed that infants, normally, have free nasal respiration. That is because there has not as yet been any disturbance in the development of the bony framework of the mouth and nose. A little

later on, the exact time varying, when the tonsils and adenoid tissue at the vault of the pharynx begin to grow, and as the result of catarrhal inflammation or inherited dyscrasiæ, they become enlarged, blocking the posterior choanæ, thus necessitating mouth breathing; then this condition in conjunction with the total absence of intranasal air pressure gives rise to a constant pressure in the oral cavity which forces the soft, yielding bones of the roof of the mouth upwards, forming the high arched palate peculiar to all mouth breathers. The steady upward pressure on the soft and resilient nasal cartilages and bones of the septum against the more highly ossified, hence unyielding, bones of the roof of the nose means for the septum a yielding somewhere under the pressure. It will necessarily take place along the lines of least resistance, which means a bending over into either one of the nasal chambers, more or less occluding the chamber into which it protrudes. The opposite nostril then becomes proportionately larger, but, owing to the fact that this is the larger nostril, it must perform the function usually done by two, especially if the deflection is very pronounced or is accompanied by enlargement of one of the turbinates on that side. There also forms a compensatory hypertrophy in this chamber which often assumes such proportions that this nostril also becomes more or less closed, thus adding greatly to the original distress. In a recent case this hypertrophy had existed long enough to degenerate into a well-marked polypus at the extreme anterior end of the inferior turbinal of the larger side. There was, of course, complete obstruction to nasal respiration.

Doubtless many cases, perhaps the majority, occur as the result of injury

to the nose in infancy and childhood to which no attention is paid, or for one reason or another is neglected. Only occasionally are these cases brought to the specialist. A recent case had the septum badly bent; it could be easily replaced, but of course did not remain in position but a few moments, apparently a green stick fracture. Appropriate treatment was declined, as I presume it often is, for the reason that as there was no external deformity the damage within the nostril could not be so great as to necessitate the treatment proposed. It was then suggested to straighten the septum with the little finger two or three times daily, but this was likewise neglected. They trusted to time to heal, instead of which time only intensifies the abnormality. Likewise youths and adults neglect these injuries, deeming them beneath their notice—a mistaken sort of stoicism.

This condition is rich in its symptomatology—the degree of distress and suffering depending largely upon the stability of the nervous system. Objectively the septal deformity can be best determined by anterior and posterior rhinoscopy, or lacking these, by careful digital exploration. This latter method is mentioned but not to recommend it, as it cannot be at all definite or satisfactory. When there is much turbinal enlargement the exact nature and extent of the deviation can be determined only after the reduction of the soft tissue with cocaine and adrenalin solution. Occasionally actual removal of the redundant tissue is necessary before an exact diagnosis is possible.

The subjective symptoms depend somewhat upon the location and nature of the deflection and of the turbinal involvement. They consist of an impaired nasal respiration. This may be unilateral or bilateral, and when the

latter the most distressing symptoms exist. Extreme susceptibility to catching cold, a history of a continuous cold from the beginning of cold weather to the first warm days that usher in the spring season is not at all unusual. Frequent neuralgic attacks often of a most severe and persistent type are common.

Just here it is of interest to study for a few moments the nature and the location of these head pains. At first the attacks are infrequent, mild, of short duration; the pain is referred to the location of the supra-orbital nerve of one side only; the attacks occur at irregular intervals and at any hour of the day. Later on, as the catarrhal condition becomes more chronic and thickening of the tissues increases, pressure on the surrounding structures ensues and the seizures become more and more frequent, of greater severity, lasting longer; the pain is now located in both supra-orbitals, possibly the temporal region, sometimes in the back of the head, especially the occipital protuberance, radiating thence to the neck and spinal column. As the years go on—nothing perhaps being done other than internal medication for the relief of the condition—all of the symptoms enumerated are intensified until the day and the night are alike made hideous by the constant misery. After a time, varying with the nerve force of the patient, the constant suffering creates a disordered mental state, known as *aproxexia*, in which there is a distinct perversion of mentality. It is usually in this state of irresponsibility that relief is sought from the use of cocaine or morphine or both. No pain so distressing or lasting or producing such general debility follows eye-strain, for some relief can be had by closing the eyes, by refraining from the use of the eyes or in sleep. There is indeed no diseased

condition that will occasion the characteristic head pain of a severely deflected septum.

There is yet another symptom that demands consideration, dyspnoea. Shortness of breath is often very marked, especially on taking exercise, stimulating that condition arising from heart disease. A very recent case had this symptom to such a degree that he had been examined repeatedly for heart trouble; it could not be found, yet the discomfort persisted, causing him considerable distress and alarm. Some weeks after the septum had been straightened he volunteered the information that his distress about his heart had left him, and that he could run, walk rapidly or uphill without causing any discomfort whatever. Attacks simulating asthma are not at all infrequent. There are quite a number of other reflex disturbances; they are among the more infrequent manifestations, but time does not permit their consideration.

The complication of septal deflection are often as important, frequently more troublesome, than the original affection. Obviously it is impossible; it would make the paper too lengthy to give in detail the symptoms of each structure that may become involved. The nasal duct may become contracted or completely closed at its opening into the nostril, giving rise to the characteristic eye symptoms of lachrymation, conjunctivitis and a host of other troubles. If the opening into the maxillary antrum becomes involved and drainage and ventilation of that cavity interfered with we get symptoms referable to the structure. If the drainage from the ethmoid cells or frontal sinuses is impaired, not only do we get the discomfort of the more or less profuse and troublesome discharges, but the head symptoms are

much intensified. The sphenoid sinus becomes involved only when the deflection is posterior, blocking the choanæ, and when accompanied by hypertrophy of the posterior ends of the inferior turbinals or with concomitant adenoids. More frequently than any other organ the ears become involved either by the extension of the catarrhal process through the Eustachian tubes into the middle ear or by more or less occlusion of the tube, ventilation is impeded, causing a dry catarrh of the middle ear. With it comes the head noises, tinnitus of all kinds, deafness more or less profound, pains of a vague nature, sometimes referred to the teeth, vertigo; itching in the external auditory canal is a common symptom and often difficult to control. As a further result of nasal stenosis, there is mouth breathing with its long train of interesting symptoms. Since the air so inspired is neither warmed, moistened nor filtered, it acts as an irritant upon the entire respiratory tract, setting up catarrhal inflammations of all kinds, becoming especially troublesome if the lingual is affected or if the larynx is invaded; whence originate a number of the intractable coughs, hoarseness and loss of voice that often baffle internal treatment, but are readily relieved by appropriate local treatment.

It is this condition, mouth breathing, which by reason of deficient oxygenation of the blood interferes with the processes of metabolism, producing more or less physical depression.

While it is true that many cases of septal deflection pass through life with but slight discomfort, yet it is likewise true that many suffer very great distress. It is also remarkable how many obscure symptoms will clear up after a successful septal straightening.

For a deviated septum there is but

one treatment that is satisfactory and permanent, and that is the surgical method of straightening it.

Of the innumerable operations that have been from time to time suggested and practiced in times past, but few remain to serve as useful procedures. In the past, the septum in its entirety was cut through, mucous membrane cartilage and all, or was crushed and broken and then with powerful forceps manipulated until it was finally forced into the desired position. To-day these methods have been superseded by methods more exact and more humane.

The sub-mucous resection of the deviated septum, whether cartilaginous or osseous, is the true refinement of nasal surgery of the present day. It is an operation requiring much manual dexterity and delicate technique, and while, as with everything else, there are some objections to it, it remains nevertheless the operation of election in the great majority of cases. While the operation is but a few years old it has been followed by fewer untoward results than any other formerly in vogue. Of course the operations described in the text books still have their votaries, and their place, and rightly so, for as a man has acquired a technique, so should he operate. It is deemed unnecessary to go into extensive description of any of these several methods as that is of interest and importance only to those who devote their time and attention to these special subjects.

It is hoped that this writing may serve to direct attention to the possibilities of mischief and misery originating from neglected and untreated deviation of the nasal septum as well as the possibility of relief by the appropriate surgical correction.

506 E. GRACE ST.

The Virginia Medical Semi-Monthly.

TREATMENT OF ANTE-PARTUM ECLAMPSIA.

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Read by invitation as a part of a Symposium before the Southside Medical Association, at Petersburg, Va., March 3, 1908.

OF ALL the pathological conditions of the gestation period, none is commanding greater interest than pregnancy-toxemia, and I am equally certain that nothing is more to be dreaded than an eclamptic seizure occurring several weeks before the expected confinement in a primi-gravida who has had no prophylactic care. For this reason the condition is doubly appalling, and the prognosis proportionately uncertain. The maternal mortality in ante-partum eclampsia having been shown to be 50 per cent., and the fetal mortality 69 per cent., as against 25 per cent. for mother and fetus in the intrapartum variety, no argument is needed to show the necessity for recognizing early the pre-eclamptic state, whose classical symptoms represent only too truly an over-charged circulation with one or more unknown toxins.

At the risk of over-lapping in some degree the subject of prophylaxis assigned to the first paper in this symposium, I feel that because the eclamptic tendency is proportionate with the advance of pregnancy, I will be excused for further emphasizing the supreme importance of *early, unremitting and systematic* medical supervision of the pregnant woman in accordance with the individual symptoms, and particularly the local uterine conditions presented.

Regarding the management of the pre-eclamptic state; if, despite the general hygienic and medicinal treat-

ment represented by an exclusive milk diet and the systematic stimulation of *all* the eliminative processes, the danger signals are progressively increasing, I am in accord with those who believe that premature labor should be promptly induced, *but only by that method or combination of methods best suited to the case in hand*, some being better adapted to slow; others to more rapid methods of emptying the uterus. And I am reminded to say just here, that the apparent divergence of opinion regarding the choice of methods for the induction of labor is more than likely to be accounted for by the failure to fit the method to the individual conditions of softening or dilatibility of the cervical tissues.

I believe further, it is very important to keep in mind the fact that, in the presence of convulsions, no routine treatment can be followed; but each must be managed in accordance with the conditions that confront us. In recent years, I have followed the combined treatment—that combination of procedures which *seeks to control the convulsions, eliminate the toxins, and hasten the delivery, while the patient is under complete anesthesia, by some rapid method which promises the least injury to the mother.*

It is well to bear in mind that these indications must be fulfilled as nearly as possible at the same time, and, therefore, it is very necessary to have several cool-headed assistants, selected from others than the family to do important and varied work under the direction of the man-in-charge, who must, of course, never for a moment lose his head.

To Control the Convulsions.—Chloroform, veratrum and chloral, are the most reliable. The chloroform must be given just as the seizure is coming on, and discontinued in the intervals between the convulsions. It is useless

to administer it while the respiratory muscles are fixed, and it is a mistake to continue the giving of the anesthetic after the convulsion is off unless efforts are being made to dilate the cervix; the unnecessary use of chloroform only increases the cardiac depression already induced by the toxemia. Undoubtedly many cases have died because of the too lavish use of chloroform. I feel that I am correct in saying that few of us rely on chloroform alone, but every one will agree that it is our most valuable adjunct to other treatment.

My second choice of anti-eclampsics is the Southern remedy, veratrum, especially if the pulse is full and rapid. When given guardedly, ten to twenty minims of the fluid extract hypodermically for the first dose, followed by five to ten minims every half hour, until the pulse is reduced to 65 or 60, the convulsions will generally be held in check. Up to the present time, I have not seen any untoward effect from veratrum, but should its depressing action go too far, whiskey is a certain antidote. Not only does veratrum control the convulsion, but it acts upon the skin and kidneys, and, in addition, it is claimed to relax the cervical sphincter—a most important consideration when hastening delivery.

My usual custom is to administer chloroform for the convulsive attack itself, and when it has subsided start with the veratrum as stated above, unless especially contraindicated. If the case is a very severe one I administer 40 to 60 grains of chloral by rectum, or, if patient can swallow, 30 grains by mouth. To be effective it is generally conceded that chloral must be given in large doses. Not only has the chloral treatment the endorsement of the American, but of the French and German obstetricians as well; and when it is remembered

that Winckel saved 85 out of 92 cases with large doses of chloral, this remedy must always hold a high place in the treatment of the convulsive stage. About the morphia treatment, I am skeptical, notwithstanding the announcement from Veit that he had treated 60 cases with morphia with only two deaths, the lowest death rate, by the way, from any plan of treatment ever proposed; but up to the present time the idea impresses itself upon me that morphia must antagonize the eliminative part of the treatment, and for this reason, I have never used it.

Elimination. — Of the eliminative measures copious irrigation of the colon with normal saline solution, given through a rectal tube not less than 30 inches long, heads the list. This must be thoroughly and systematically carried out. The patient should either lie on the left side or in the dorsal posture with hips well elevated. From four to five gallons should be used, possibly more, taking care that the outflow is not obstructed. A quart of the saline should be left in the colon. This should be repeated every six hours. Of course, the time-honored hydragogue cathartics should be given. Large doses of calomel, ten to fifteen grains, followed by sulphate of magnesia are most important in nearly all cases, particularly if there be hepatic torpor. In those cases presenting post-eclamptic stupor, large quantities of saturated solution of sulphate of magnesia placed high in the colon by the long tube give most excellent results. It is important that the tube should be placed as high as possible, and that the saturated solution shall be given with a free hand.

To encourage the action of the skin I prefer the hot-air bath to the hot-pack. The objection to the latter is the difficulty of determining whether

the moisture on the skin is perspiration or the steam from the wet blanket. The hot-air bath can be secured in a few minutes by using an angular section of a stove-pipe, the short arm of which being placed over a lamp, the heat is conducted under the bed-clothing, the latter being well pinned down to the bed. Care must be exercised, however, in using the hot-air bath because its prolonged use is depressing. It is well to keep ice to the head while the patient is in the hot air.

The subcutaneous injection of normal salt solution greatly aids free elimination by the skin as well as by the kidneys and should always be given; a good site for it is under one or both breasts. It is hardly necessary to say that this must be aseptically done and that care must be taken to see that the long hollow needle goes *under* and not into the gland, but I have seen this mistake made. If sweating does not follow hypodermoclysis this method should be used with caution. It is claimed that the salt solution predisposes to pulmonary edema.

Venesection. — In the earlier part of my professional life, I resorted to bleeding more frequently than in later years. Whether this is a delinquency or not, I must confess to a growing mistrust in venesection, for while it is true that some authorities continue to advise it, others resort to it very infrequently or not at all. If, however, there is great plethora, cyanosis, stertorous breathing and, particularly, threatened pulmonary edema, I believe bleeding is indicated. It is generally admitted that venesection may prevent pulmonary edema, but it is doubtful if it ever cures it.

Pilocarpine I have never used because of its depressing effect on the heart and its great tendency to pro-

duce pulmonary edema. It should be universally condemned. Finally, among therapeutic agents, oxygen is a most excellent adjuvant, both as an eliminant and a stimulant, especially in post-eclamptic stupor, and when available a tank should be provided for this emergency.

INDICATIONS FOR METHODS OF EMPTYING THE UTERUS.

During pregnancy, if, despite the most diligent eliminative treatment, the urinary findings and the subjective symptoms show that the toxemia is progressively increasing there remains but one thing to do—empty the uterus. If labor has not already set in, and there is no special reason for haste, a slow method is unquestionably the one to be selected; one least likely to increase reflex excitability and thereby precipitate a convulsion. The method which has served me best under these circumstances is the bougie or a No. 20 F. soft rubber catheter. While this is a safe method it must be admitted that it is uncertain, for while uterine contraction may set up in a few hours, it often happens that a second or even a third catheter has to be introduced. I have had occasion to employ it a number of times, however, and, when re-inforced by a cervical gauze tampon packed closely into the cervical canal and also well around the cervix, it has rarely failed of results.

When, however, the toxemia has progressed in the ante-partum condition to the *point of convulsions* and labor pains however slight are being excited by the attack, the gravity of the situation then demands that premature delivery *shall be hastened by a rapid, and at the same time, a safe method, while the patient is under anesthesia.* It is extremely fortuitous if the pains are increasing for this is evidence that Nature requires that the pregnancy

shall be interrupted and that she is doing her best to accomplish that end. As a rule, the pains increase in force in proportion to the severity and frequency of the convulsions, thereby producing a softening of the cervix that will admit of a partial dilatation of the greatest obstacle to delivery, viz., the internal os. This is the time when veratrum is so valuable for the reason mentioned above, viz., its property to soften and relax the cervical rings. If, under these conditions, it is possible to introduce the smallest Voorhees' rubber bag, it should now be done, and by means of it complete the dilatation of the cervical canal and external os to a size that will admit the index finger of each hand, and successively the remaining fingers of both hands until dilatation has been accomplished. If it should be found that Nature has already dilated the cervical canal and that the external os alone remains to be opened, the situation is the more fortunate, because the bi-manual dilatation can be started at once without the preliminary use of the Voorhees' hydrostatic bag. Assuming that dilatation has now been accomplished by the bi-manual method and that the time has arrived for the extraction of the child, the choice of method of extraction depends upon the following conditions: if the head is low down in the pelvis, apply the forceps; if the head is high and particularly if movable above the superior strait, delivery should be completed by version.

There are times, however, when even a more complicated condition exists than the one just mentioned, and when it may be very difficult to decide what is the best course to pursue. I refer to those cases (and worse still if they are primiparæ) which are seized with *convulsions several weeks before the expected confinement, and which*

present a closed cervical canal with a cervix but little if at all shortened, and which show no signs of uterine contraction. Here the need for rapid emptying of the uterus would seem to be supreme, and, yet, any attempt at forcible dilatation, whether by parallel steel dilators, or by any type of the Bossi instrument, of a cervix whose supra-vaginal portion has not yet dilated, would undoubtedly expose the patient to the certain danger of extensive uterine rupture, serious hemorrhage, and possibly death.

The obstetric treatment under these circumstances depends in large degree upon the patient's environment. If in a hospital, the trend of modern opinion leans to the deep cervical incisions carried up to the vaginal vault, first proposed by Dührssen, or, what is believed to be better, his elaborated operation, the vaginal Cæsarean section. If in the patient's home, however, these operations, and especially the latter, should not be attempted, particularly in the absence of competent assistants and the necessary accessories. Stated broadly, the treatment best adapted in the home of the patient for convulsions unattended by labor pains, and in presence of a closed cervical canal, several weeks before term, is the Voorhees' hydrostatic bag in graduated sizes, if the cervix can be dilated enough to permit of its introduction. Otherwise, one is forced to rely entirely on therapeutic measures, a cool head and discriminating judgment for the management of the case. Much has been written in advocacy of the Bossi dilator, which is believed by a few obstetricians to be especially adapted for just this class of cases, but the more conservative of this country are so much opposed to rapid delivery in a closed cervix that Bossi's dilator and all other methods of forcible delivery are very properly ruled

out. The same statement can be applied to the classical Cæsarean section proposed as far back as 1889 for this variety of eclampsia. All that need be said about this operation is that it has not been favorably received nor is it likely to be as long as it is followed by the high mortality rate of 36.25 per cent.

FUNDAMENTAL PRINCIPLES OF DILATATION.

Reverting to the second classification, viz., convulsions accompanied by a partial dilatation of the cervix—it is for these that bi-manual dilatation finds its widest range of application, and I would lay special stress upon the fundamental principles upon which its success so largely depends:

1. Under no circumstances should extraction be attempted until the internal os has been completely dilated; and, when full dilatation has been secured, continue efforts at dilatation a few moments longer to produce complete relaxation of the cervical ring before extracting the fetus. The failure to observe this injunction incurs the most imminent risk of rupture of the lower uterine segment, as well as the death of the child.

2. It is equally important that dilatation shall be gradually and slowly performed. Any attempt to score a record for a complete dilatation in a specified time as in "one hour" or less time, without a preliminary softening or relaxation of the cervix must be condemned.

3. Suspend all work at dilatation when the cervix contracts around your finger, resuming efforts when the cervical ring begins to relax.

4. Imitate always Nature's method by pulling somewhat downward while at the same time pulling at right angles to the cervical axis.

5. Be sure that the fingers are car-

ried well up within the internal os, remembering that the natural method starts with dilatation of the internal and stronger ring. For this reason any attempt at dilatation beginning with the external os and ending with the internal ring is to be avoided.

Technique of Bi-manual Dilatation.—

When practicing bi-manual dilatation after the method proposed by Bonnaire and popularized by Edgar, the operator stands to the patient's left side and, with the right hand carried over the pubis, the forefinger is introduced in a manner that necessitates extreme flexion at the wrist, the operator's body bending greatly to the left side. I have found this posture extremely awkward and tiresome; and, furthermore, with the wrist in complete flexion one has little power to make the traction needed; consequently, I am in the habit of standing or sitting directly in *front* of the patient, making traction straight from the shoulder with one forefinger in supination and other in pronation. One has but to try both ways to find the latter much the easier of the two.

To Be More Explicit.—With the right index finger in the position of supination, traction is made upward behind the symphysis. The tip of the left forefinger is next introduced while in pronation; the backs of the fingers being in relation with each other, traction being made in opposite directions. While continuing this pressure, change frequently the point of contact, and, necessarily, the direction of traction, antero-posteriorly, laterally and obliquely, taking care that all parts of the ring shall, in their turn, be acted upon. The point to bear in mind is that the pressure is continuous and is gently and evenly distributed. When dilatation is thought to be complete, continue the pressure steadily a little while longer until the fingers impinge

on the walls of the pelvis and thus produce that full relaxation and paralysis of the ring already referred to above and which is acknowledged to be so essential for successful delivery.

114 N. FIFTH STREET.

The Virginia Medical Semi-Monthly.

THE RELATION OF EYE STRAIN TO EPILEPSY.

BY DRS. M. B. HODSKINS AND G. A.

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THE relation of eye strain to epilepsy has been discussed by a number of writers, whose deductions differ very materially.

There are two classes representing the extremes, one class holding eye strain to be the cause not only of epilepsy, but of such other diseases as chorea, insanity, etc. The other class considering eye strain to be something invented to enrich sundry oculists and to furnish a good battle-field for a wordy war.

The tendency of certain enthusiasts to claim more than careful examination of facts seem to justify, has served to intensify the feeling of the extreme conservatists, who believe that their mission is to resist every effort made, in the direction of changing existing conditions, or even toward modifying them in the slightest degree. Many of the workers in the medical field to-day have made a special study of some particular branch of their profession, and this in a great number of cases, instead of broadening the individual's view, has narrowed it to the horizon of his particular specialty and he seeks for and finds within the limit of his special branch a cause and cure for almost all the diseases known to man. Thus the gynecologist finds his ready etiological heap

in the uterus and adnexa. The stomach specialist finds a cause for the same disease higher up, and the oculist sees the whole world awry, unless he views it through spectacles.

This paper is not intended as a stricture, for who will say that the workers in the different specialties have not done well? Many mile stones have been passed, and the progress is something of which we may well feel proud.

It being true that all reputable medical men are working toward a common goal, each should welcome the assistance of others, even when that assistance comes in the form of critical consideration of his views.

This paper, let us say, is not intended as a solution of the matter in hand, nor is the test reported here, considered by the writers as conclusive, it is merely submitted as evidence.

The idea of carrying out this test was conceived on reading an article written by Dr. George Gould, of Philadelphia, which appeared in the annals of ophthalmology, in October, 1905. He says, "In 1902 I proposed to the superintendent of Craig Colony, the experiment of atropinizing the eyes of 100 young epileptics for 30 days. The test was not allowed. I believe it would be far more conclusive than the poorly conditioned test permitted. I hope some liberal minded physician or superintendent will sometime conduct such a simple, harmless and easily carried out experiment."

The writers brought the matter to the attention of Dr. Flood, Superintendent of the Massachusetts Hospital for Epileptics, and permission being obtained, every possible assistance was given to make the test successful for which the thanks of the writers are given.

The plan was to place under full

mydriasis a large number of patients, so as to eliminate eye strain, and keep them with paralyzed accommodation for one month, and then compare the results, as evidenced by the number of seizures, with the numbers shown in other months. The variation in frequency of seizures being so great, we have tabulated the seizures for six months, taking the maximum and minimum months, and also an average of maximum and minimum months, as well as the month of April, the month during which the test was made.

There have been several workers along this line, and briefly some of their conclusions are as follows: Wigglesworth & Bickerton think that a few cases, the cause of which is undetermined, may be caused by refractive errors.

They report a series of 112 cases which they divide into two classes. The first is epilepsy associated with insanity, in this class are 103 cases, the refractive conditions were as follows:

Emmetropia, 55 cases.

Refractive errors, 48 cases, which were divided as follows: Hyperopia 18, Hyperopia astigmatism 17, myopia 3, myopia astigmatism 7, mixed astigmatism 3, H. As. one eye. M. As. in the other one case. Five of the most promising of these patients were given glasses with the following results: one died in status, two refused to wear their glasses, the other two wore their glasses with some benefit. (In these two cases, the number of seizures were not given.)

The second class was a series of nine cases seen in private practice, all of whom were fitted with glasses.

Case No. 1. Hyperopia cured.

"	"	2.	"	"
"	"	3.	"	was relieved.
"	"	4.	"	Astigmatism, not improved.

- Cane No. 5. Hyperopia Astigmatism, cured.
 " " 6. " Astigmatism, relieved.
 " " 7. " Astigmatism, no improvement.
 " " 8. Myopia was relieved.
 " " 9. Hyperopia astigmatism, too early to give an opinion.

H. Work, Dodd reports 100 cases, the refractive conditions were as follows:

Hyperopia,	42%
Astigmatism,	42%
Emmetropia,	7%
Others,	3%

This writer gives the following conclusions:

(a) Errors of refraction are very common among epileptics.

(b) Glasses and other treatment will in some cases cure or relieve epilepsy.

(c) In some cases when the refraction has been corrected, the epilepsy will continue in a modified form.

Ranney says of some patients whose refractive and other ocular defects have been corrected. "They are peculiarly apt to have a convulsion where ordinary patients would have simply a headache or some milder evidence of depression, such attacks mean nothing," he adds naively, "they are not to be taken as evidence of a return to the old epileptic condition." He also states that in epilepsy heterophoria is almost universally latent. This worker reports case after case of epilepsy cured by glasses, and snipping the extrinsic muscles, and then with the same therapeutic agent attacks the ranks of the insane, and cites case after case, as being cured and *returned* to their families. He also frequently cured chorea by this same means.

Stevens in his prize essay gives the refractive condition found in 100 cases

of epilepsy, hyperopia 59, myopia 23, emmetropia 18; his claims are rather more moderate than those of Ranney's yet he worked extensively along this line, and treated a great number of cases. Swanzey cites the work of Wigglesworth, Bickerton, Dodd and Stevens, but expresses no opinion, speaks of the criticism with which this work has been received.

Pronger after discussing the influence of eye strain to headache, vertigo, etc., says of epilepsy: "In these cases other modes of treatment, notably the bromides are universally being used, so that one's results are always open to doubt. I will therefore confine myself to the statement that some error of fraction is very commonly present, and that the correction of it tends unmistakably in my opinion to mitigate both the severity and frequency of the attacks."

Standish says: "It is undoubtedly true that the symptom complex which we speak of as epilepsy, may have its starting point in the ocular strain, and may be prevented by correction of the error, when the error is simply refractive. The most brilliant results will be obtained in those cases where the disease has not been of long duration." He also advocates graduated tenotomy where the procedure seems to be indicated.

Spratling says: "eye strain has long occupied a debatable ground as a possible cause of epilepsy."

"In a large number of cases which it has been my privilege to study—some 1,800 all told—I am unable to recall a case in which I felt the whole cause to be in any anomalous condition of the visual apparatus."

Oppenheim in speaking of the cause of epilepsy says: "the cause of epilepsy has been referred even to errors of refraction."

Dana in writing on this subject

says: "Eye strain is said to be an essential factor in causing epilepsy, chorea and hysteria." The author cannot accept this view, and believes that the importance of muscular asthenopia in causing general nervous symptoms is not great.

Church says "great and unwarranted stress has been placed by some enthusiasts upon a condition of lack of balance of the extrinsic ocular muscles named heterophoria; of much greater importance are errors of refraction and accommodation in myopia, hyperopia and astigmatism."

Whether eye strain can be classed as a true etiologic factor in epilepsy seems to us to be as yet in doubt.

The reports of cases are not sufficiently exact.

An interesting case in point, which has come to our attention is as follows: it also shows the looseness with which some makers build. Mr. H. a cashier in a bank received a head injury by a fall from a bicycle, was unconscious for some time, in a year or so developed so-called fainting attacks, and finally well defined grand mal. He spent a great deal of time in going from one physician to another, and was assured by all that it was epilepsy. While relieved some by dietetic and other measures, he was still a great sufferer. He finally visited an oculist in New York, who became convinced that the cause of the malady lay in an imbalance of the extrinsic muscles of the eyes. With great hope the patient submitted to treatment, six in number were the operations performed in the first series, a rest of a month or two, then another period with the oculist, during which five more operations were performed, and wonderful to state the fits ceased. The case was duly recorded as one of the remarkable cures of epilepsy, by removing eye strain.

It is rather a shame to spoil the above report, it sounds so good, but in three months the fits began once more and were worse than ever, the patient finally dying in status.

The autopsy revealed at the site of the old head injury, a granulating and adherent dura and pia, the adhesions extending for a considerable distance over both lateral lobes.

Many of the cases put forth as cures are very deficient in data. Other cases are put forth as cures, with admission made in almost the same paragraph that they still have fits.

These fits we are warned, however, are in some way different and harmless.

In our series we have 88 cases. In these cases atropine was instilled until full mydriasis was produced, and the accommodation paralyzed. This condition was maintained for one month. The seizures were tabulated for four months previous, and the month after the atropine month, then they were compared with the month in which atropine was used with the following results: Total number of seizures during the atropine month was 1,110, an average of 12.6 seizures per patient.

Total number of seizures in minimum month, 545, an average of 6.1 per patient.

Total number of seizures shown in maximum month was 1,730, an average of 19.6 per patient. We have now taken the sum of the maximum and minimum months, which is 2,275, and from this get an average per month of 13.2.

A comparison of this average with that of the month of April, the month during which the test was applied, shows a difference in favor of April of .6 of one convulsion. It is needless to add that such a slight difference as that means nothing.

The refractive condition was:

Emmetropia,	45
Hyperopia,	31
Myopia,	12

It will be seen by reference to the chart that the average age at which the first convulsion occurred, is ten and a fraction years. When we take into consideration with this the fact that all children are normally hypermetropic till eleven years of age, it would seem that we can scarcely put hypermetropia down as the cause of this disease under consideration.

There were in this series of cases, 31 hyperopes, this number added to the emmetropes of which there are 45, makes in all 76 out of 88 which could (figures of the experiment aside) hardly be argued to have eye strain as the reflex cause of their malady. This leaves twelve as yet unaccounted for; they were myopes. Myopia is not by the majority of writers held to be so productive of eye strain as some of the other ocular errors.

The writers do not wish to be understood as taking the ground that reflex disturbances of a serious character sometimes may not be due to errors of refraction and disturbance of the ocular muscular balance.

We believe that disturbances do arise from these conditions and in the Massachusetts hospital for epileptics everything possible is done to remove these additional burdens from the patients, by operations on the muscles when indicated or by the proper correction of errors of refraction. The summary seems to be that taking Dr. Gould's method of experimentation as mentioned above, we have been unable to support his views by the result attained.

The cases to which an organic cause can be safely assigned, amplified by the addition of those cases, which undoubtedly are due to the following: Syphilis, exanthemata, occasional

metal poisoning, absinthe, alcohol, malaria, menstrual crisis, intestinal parasites, repeated severe hemorrhage, and further bolstered by the conclusions arrived at in the induction of experimental epilepsy, seems to testify strongly in favor of the belief that if eye strain is a factor, it is a small one, and operative in only a comparatively small number of cases.

The position of the writers in regard to eye strain as a cause of epilepsy may be summed up briefly as follows:

We believe and have believed that eye strain in an individual with a sufficiently unstable nervous system would possibly add to the discomfort and so far as its effect upon the individual's nervous system went, just that far would it act as an excitant.

Holding these views it has been the custom at this hospital to carefully search for ocular defects and correct them.

This, however, has been done for the comfort of the individuals, and to prevent lid disorders, which frequently are the results of errors of refraction, but never with the thought that ocular defects (per se) were a cause of convulsions.

We firmly believe that the role played by ocular defects in the causation of epilepsy is a very modest one.

Vermont Medical Monthly.

—:o:—

PURULENT RHINITIS.—M. H. Roger (*Bull. general de thérapeutique*) recommends irrigation of the nasal chambers with hydrogen dioxide solution, combined with an equal volume of solution of sodium bicarbonate (two per cent.) After the douche, he makes a local application of petrolatum containing eight to ten per cent. of menthol.—*N. Y. Med. Jour.*

Review of Current Medical Literature

With Editorial Comments.

Under the Charge of
"Amicus Curiae."

Medical Record, July 18, 1908.

STATE BOARD EXAMINATION QUESTIONS.—PHYSIOLOGY. I.—"*Metabolism*. (a) Define and give classification.

Answers.—(a) *Metabolism* is the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) Assimilation, or constructive (anabolism), and (2) destructive (catabolism)."

EDITORIAL COMMENTS.—The above question (concerning the meaning and classification of *metabolism*), is taken from among the ten questions propounded in the "Physiology" paper by the Michigan State Board of Registration in Medicine (or rather the State Medical Licensing Board), at the "Examinations" held at Detroit, May 25, 26, 27, 1908. The answer to the question, has been published by the State Board as above quoted, as being the correct one, in the estimation of the members of said "Board." Of course, it was not expected that the applicant for license would answer the question in exactly the same words, as above quoted; but it was doubtless considered a *sine qua non* that the answer should be along the lines they have given.

And yet, how many physicians taking this examination would be likely to submit such an answer?

Competent practitioners of medicine are, generally, well acquainted with the term *metabolism*, but it is doubtful if any two of them, out of ten, would give the same definition. Moreover,

it is extremely doubtful if any two would give the same classification.

Had we been one of the unfortunate applicants to take the examination, our definition of the term *metabolism* would probably have been somewhat as follows; to wit: "*Metabolism* is the assemblage of transformations which a constituent of the organism undergoes in its passage through the body, i. e., from the time of its ingestion (in the form of food or drink) until its egestion from the body as waste.

We are inclined to think that we may have read the above definition somewhere; but we are quoting entirely from memory, and it certainly represents our preconceived ideas on this subject.

The Journal of the American Medical Association, August 22, 1908.

DEATH AFTER FALL AGAINST TIMBERS AND WHAT CONSTITUTES "INFECTION."—"The Supreme Court of Kansas says that the injury to the insured in Continental Casualty Company vs. Colvin was received on January 9th, from a fall which precipitated him against the edge of timbers, whereby he was bruised on the left side of his chest with sufficient force to cause external soreness and discoloration of the skin. He did not regard the injury as serious when it was received, although quite painful, and, except for a loss of six days, he continued at work with the occasional assistance of his fellow-servants, up to January 29th. January 31st he called a physician, who pronounced the ailment to be pneumonia, or pleurisy, and gave treatment therefor. On February 14th, there being no improvement, another physician was called, who, on examination and consultation with the first physician, de-

cided that the former diagnosis was incorrect. The insured was then removed to a hospital, where, on February 16th, an operation was performed by which it was ascertained that the chest cavity contained a large accumulation of pus. This was liberated and the cavity drained. The patient was very much exhausted, however, and on March 7th he died. The court affirms a judgment in favor of the beneficiary on an accident insurance policy which provided that the company should pay indemnity in the event that said insured should receive personal, bodily injury which was effected directly and independently of all other causes through external, violent and purely accidental means and which caused at once total and continuous inability to engage in any labor or occupation, which was followed by the further provision that if within ninety days from the date of the accident loss of life should result the company would pay the principal sum stipulated. The court holds that in an action by the beneficiary named in such a policy to recover the stipulated indemnity for the death of the insured, who died from an accidental injury, the condition that such death must have resulted "necessarily and solely" from such injury would be satisfied by showing that the injury was the predominating and efficient cause of the insured's death. The fact that other conditions were set in motion by the injury which may have contributed to such result was immaterial. The court also holds that the word "infection" as used in such a policy in providing for special indemnities "where the loss is occasioned or contributed to in any way by erysipelas, blood poisoning or infection," relates to external injuries, and does not include internal inflammations

where pus is formed by the presence of pus germs."

EDITORIAL COMMENTS.—For once, at least, we feel that we can applaud the decision of the court. The reasoning, by which the judgment was arrived at was not only logical, but *medically* logically. The beneficiary, in this case, would certainly seem to have been entitled to the "stipulated indemnity;" and we are glad that the court's decision was in his favor. We presume that the chief point of issue was over the "infection" clause.

We recently became interested in a "Casualty" case, in which the point of dispute was even closer than that of the above. In this instance, the Casualty Company, *at first*, refused to pay the indemnity of the claimant, on the ground of the latter's "carelessness" or "negligence." The question at issue was: "Did the insured receive an accidental injury through 'carelessness,' on his own part?" This question was finally left by both the company and the claimant for *us* to decide. The "accident" was as follows, to wit:

A man, with "ingrowing" toe-nail, upon a certain night before retiring, grasps an extruding piece of said nail and attempts to remove it forcibly; but the latter is torn off too low down in the quick and an extremely sore toe results, followed by so-called "blood-poisoning," which renders the insured totally incapable of performing his usual duties. He claims *total disability* for a period of eight days—i. e., up to the beginning of his convalescence.

As examining surgeon for the Casu-

alty Company, it is left to us to decide whether the claimant was careless or negligent, and whether he was entitled to indemnity.

We decided in the claimant's favor. His accident was attributed by us to ignorance, rather than carelessness. He was trying to better the condition of his toe, and was seemingly *careful* in his performance of the act. Inasmuch as he was *attempting* to prevent future suffering, he could hardly be accused of "negligence."

Medical Consensus, May, 1908.

HYDROPHOBIA FALACIES.—"Perhaps the most dangerous misconception concerning the mad-dog is the idea that he is always violent and foaming at the mouth. There are two forms of hydrophobia—the dumb type and the furious type. In the furious type the dog is not violent nor foaming at the mouth until the last stages of the disease. In the dumb type these symptoms usually do not appear at all.

The earlier signs in both forms of rabies are restlessness and irritability. Sometimes a reserved dog becomes more affectionate temporarily, but at the same time more restless. Another early symptom is the disposition of these dogs to run chickens, when previously they had never been known to indulge in the practice. Therefore any sudden change of disposition in a pet dog should be considered as a warning. Difficult swallowing coupled with irritability is pathognomonic. The dumb type terminates within three or four days in death; while the furious type lasts six or seven days, changing to the dumb form a day or so before death.

The madstone, of course, has absolutely no effect on a mad-dog. The belief that the affected animal fears water is also a falacy. The difficulty

experienced in attempting to swallow water may have led to this idea. Moreover "dog days" do not influence the susceptibility of dogs to hydrophobia. Dogs travel more, however, during this season and may thus expose themselves more widely to infection. One other mistake is the notion that a red mouth is a contraindication. It is only in the latter stages of the disease that the dog's mouth becomes dark and swollen. To sum up, a dog may be in the grasp of hydrophobia without showing any of the popular signs, and all dogs exhibiting unusual habits or increased irritability should be isolated or shot at once.

The love of dogs is so general that hydrophobia will always be a danger to us; but the splendid results of the Pasteur treatment robs the disease of its terror. In the opinion of this journal every family that keeps a pet dog in daily contact with children, should first have the dog immunized by some nearby Pasteur Institute."

EDITORIAL COMMENTS.—The foregoing editorial has been published here for two reasons; viz.: (1) To direct attention to a worthy medical journal *Medical Consensus*, which has not yet become as well-known as it deserves; and (2) because of the interest of the article itself.

One of the other "hydrophobia fallacies," not referred to in the foregoing description, is the misconception, rife in most communities, that a person bitten by a dog (rabid or not) cannot escape hydrophobia unless the dog is speedily killed. We are inclined to think that, in a community of this kind, where the people firmly believe in the necessity of killing the guilty animal, it will serve a good purpose to dispatch him; otherwise the bitten

person will suffer from hysterical symptoms. FAITH is a very efficacious therapeutic agent, especially in the treatment of nervous complaints.

—:o:—

INFLUENZA; MASTOID ABSCESS; LEPTOMENINGITIS; NINE-DAY UNCONSCIOUSNESS; THREE OPERATIONS; DEATH; AUTOPSY.—H. Brooker Mills and Nathan G. Ward report this case. The patient was a man 39 years old. Although several operations were performed for the mastoid trouble, the patient finally died. The interesting question which then arose was, whether intracranial interference would have availed anything. The pathological conditions found at autopsy seemed to prove that at no time was trephining warranted. The pain which the patient suffered was due to basilar meningitis. The pain, after some days, became unbearable. This violent suffering was doubtless due to the fact that the infection had by that time extended to the cerebral ventricles and the cerebrospinal circulation was obliterated by the resulting thick pus. Unconsciousness followed increasing pressure. The restlessness of the patient was caused by the irritation due to the pressure. No localizing symptoms were noted since the pressure was exerted over all parts of the cortex.—*Medical Record*.

SOME ASPECTS OF STERILITY AND ITS TREATMENT.—A. J. Ronginsky, of New York, believes that in sterility the male plays an important part. It may result from masturbation, excessive coition, want of sexual affinity, mental fatigue, congenitally small penis, or varicocele; finally it is necessary to examine several specimens of

semen and ascertain that the spermatozoa are absolutely normal. In the woman there may be general muscular relaxation, lack of function on account of age, or excess of sexual excitability. Of organic changes we may enumerate almost all the gynecological troubles. The principal are congenital lack of development of some part of the genital tract, leucorrhea, stenosis, and gonorrheal tube affections. The author discards infantile uterus as a cause. Appropriate remedies are suggested for each of these conditions. In conclusion he exhorts the physician to educate the public to the knowledge of the baneful effects of gonorrhea on the fertility of the sexual organs.—*Medical Record*.

PREVENTION AND TREATMENT OF CYSTITIS.—Paul Pilcher, of Brooklyn, says that the direct cause of cystitis is always bacteria. The other contributory causes include ingestion of irritating drugs, traumata, diseases of the generative organs, etc. Cystitis is often localized and patchy rather than involving the whole bladder. The most frequent site for development of cystitis is the trigonum and base of the bladder. Diagnosis involves a complete history of the illness, careful examination of patient and the urine, and cystoscopic examination of the bladder.

Preventive treatment depends on preventing trauma, lessening the number of catheterizations, and precautions in asepsis in the use of instruments. In all cases the underlying cause must be removed if the treatment is to be successful. In acute cases, heat, sedatives, and dilution of the urine are indicated. In the chronic form, irrigations with warm, sterile water and applications of silver solutions give the best results.—*Medical Record*.

NEW ENGLAND MEDICAL MONTHLY.

William C. Wile, A. M., M. D., LL. D.,
Editor.

John J. Berry, M. D.,
Assistant Editor.

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Editorials.

ANALYSIS OF FAITH CURES.

IN AN attempt to arrive at the true status of mental suggestion as a curative measure, Dr. Cabot of Boston has made a more or less thorough investigation of 100 cases of disease reported in various Christian Science publications as cured. Grouping the cases into four classes, he reports:

"First, 72 cases in which I find on careful study reasonably good evidence for the diagnosis of functional or nervous disorder.

Second, seven cases of what appears to be organic disease." The latter term being used apparently to indicate such organic conditions as anemia, emaciation, and similar lesions which admit of a varied interpretation.

"Third, eleven cases very difficult to class but probably belonging in the functional group.

Fourth, ten cases regarding the diagnosis of which no reasonable conjecture can be made."

The doctor assumes that the healers are generally honest in their claims, but that they are quite willing to accept the patient's own diagnosis which

is generally incorrect. In this connection the careless or ignorant physician is criticised for his share in the deception. And he justly concludes that many have been driven into Christian Science "by a multitude of shifting and mistaken diagnoses, by the gross abuse of drugs, especially morphine, and by the total neglect of rational psychotherapy."

TYPHOID CARRIERS.

THE fact that a person who has recovered from an attack of typhoid fever may continue to harbor the specific bacillus for several weeks or even some years is in some respects an unwelcome discovery. According to reports this condition is to be found in from one to five per cent. of cases and may persist in spite of active and prolonged medication.

The *Journal* in an editorial comment upon the subject says:

"There is probably nothing in the field of municipal sanitation which offers so difficult a problem as this. * * * Obviously we have not begun to solve the question of prophylaxis when we insist on disinfection * * * during the period of illness only. The matter becomes still more complicated through the discovery of typhoid carriers who have no history of ever having had the disease. Such persons probably harbor the bacilli only for short periods of time, yet during that time they are a menace to their neighbors. The evidence points to the probability that many who come into close contact with cases of typhoid fever become temporary carriers, but, having no symptoms of the disease they take no precautions. * * *

Against such carriers no prophylactic measures can be taken."

This source of infection, if established, will aid greatly in clearing up many obscure questions in etiology as the physician is almost daily confronted with cases whose origin seems to defy all his powers of investigation and which in default of a better name he calls sporadic.

This suggests the inquiry as to whether other diseases may not be transmitted in a similar way and whether the colon and Loeffler bacilli, for instance, may not prove, under proper conditions, a menace to the healthy individual or the community.

Further investigation along these lines is timely and should be prosecuted to a final conclusion.

CIVILIZATION AND HEALTH.

IN THE onward march, many facts have been proven to be fallacies and the older theories have become little else than tradition.

As regards personal hygiene and physical development much has been learned, and we have found that many of the older systems and methods are harmful and ill adapted to our present needs.

It was formerly assumed that the child of nature who lived in a simple and primitive way was a perfect specimen of physical perfection and barring accident was destined to exceed the three score and ten limit. However, the investigation leads us to quite a different conclusion, namely, that the

savage, the hunter, the farmer and those who live in the open are by no means immune as regards the ailments and disabilities of ordinary life and in longevity perhaps do not compare favorably with the dwellers of our towns and cities. In the case of the more uncivilized communities, the fact that only the fittest survive and we observe only the best types of a race, is no doubt the reason for our mistaken views. Certainly, these people possess a diminished or feeble resistance to disease as regards both susceptibility and endurance. In regard to physical imperfections, it is interesting to note that in a recent ophthalmic examination of a large number of Indians fresh from the plains, it was found that a large proportion suffered from errors of refraction, which in 34 per cent. were of a degree sufficient to require glasses. Although investigations along this line have not been extensive, it is probably a fact that the same condition prevails among others living under similar conditions and like environment.

The chronicles of explorers testify to the prevalence of rheumatism, digestive lesions and diseases of the heart and lungs among those leading an out of door existence. While this may be attributed in part to exposure and hardships, it nevertheless indicates a decided lack of that immunity attendant upon physical perfection.

The town dweller through his knowledge of personal hygiene is able to endure faulty conditions, while the child of nature with a better physique can exist in spite of them.

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Page 44, 3rd Edition.

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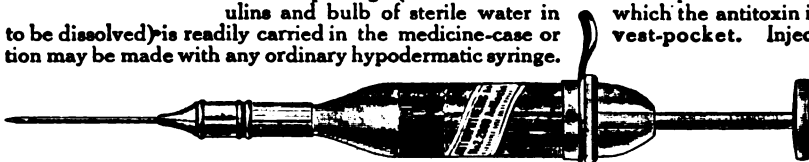
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Current Literature.

"Prospectus of the New Education Advanced Common School," by Chas. H. Doerflinger.

"Treatment of Gastric Ulcer," by Theodorus Bailey, B. S., M. D. Reprinted from *American Medicine*.

"The Relation of Appendicitis to Gynecological Pelvic Disease," by Samuel Wyllis Bandler. Reprinted from the *Medical Record*.

"Diagnosis of the Common Skin Diseases of Childhood," by William Bedford Brown, M. D. Reprinted from *The American Journal of Obstetrics*.

"The Submerged Tonsil with Special Reference to Cervical Adenitis and Systemic Infections," by Lee M. Hurd, M. D. Reprinted from *American Medicine*.

"Purulent Pyelitis Treated by Lavage of the Renal Pelves. Report of Six Cases," by Winfield Ayres, M. D. Reprinted from *The International Journal of Surgery*.

"Further Studies in the Treatment of Tuberculous Sinuses, Fistulous Tracts and Abscess Cavities," by Emil G. Beck, M. D. Reprinted from the *Illinois Medical Journal*.

"The Operation for Thrombus of the Sigmoid Sinus and Internal Jugular Vein, of Otitic Origin," by Frank Allport, M. D. Reprinted from *The Journal of the American Medical Association*.

LIPPINCOTT'S MAGAZINE FOR SEPTEMBER.—*Lippincott's Magazine* "pur-

sues the even tenor of its way," regardless of summer's heat or financial panic, each successive number being just as big, just as carefully edited, just as wholly satisfying. The September issue has for its leading feature a stirring detective novel by Nevil Monroe Hopkins—"The Investigation at Holman Square." It is published complete, of course, as is everything in *Lippincott's*. Dr. Hopkins's story has to do with a mysterious murder in New York City. His hero, a young electrician, becomes mixed up in it in a perfectly innocent way, yet he is placed under arrest and for a time finds himself in a serious position. The girl he loves is likewise brought under suspicion, as are a number of others. In fact, the plot is so cleverly complicated that the reader who can forecast the outcome will have good reason to pride himself on his astuteness. The mystery is finally solved by Mason Brant, a private detective, who has figured in at least two other detective yarns by the author.

Among the shorter stories is "The Great God News," the tale of a war-correspondent by a war-correspondent—Will Levington Comfort. "Memo-ries," by Fannie Heaslip Lea, is a delightful love story with an unexpected dénouement. "The Child of a Widow," by Lucy Copinger; "Deported," by H. C. Stickney, and "The Disaffection of Adelaide," by Laura Simmons, are also uncommonly good stories.

Of offerings other than fiction, there are "Socrates," the story of a pet owl, by Jennie Brooks; "Zelphine in Warwickshire," a charming travel sketch, by Anne Hollingsworth Wharton, and others by Jane Belfield, Herman Scheffauer and Robert Adger Bowen. There are also some excellent poems and the humorous department, "Walnuts and Wine." This last feature is unique inasmuch as every jingle, jest,

and anecdote in it is signed by the writer thereof. Fully half the contributions are by unknown authors, the only requisite for admission being merit. This does not mean that the well known fun-makers are not represented, however. Thomas L. Masson, W. J. Lampton, and most of the other prominent humorists now before the public, contribute to it regularly.

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Abstracts.

TO KILL FLEAS.—L. O. Howard recommends, in *Science*, that a soup plate be filled with soapsuds, in the centre of which is placed a glass of water with a scum of kerosene on top; place the soup plate on the floor in an infested room and set fire to the kerosene at night. Fleas will be attracted to the flame and will jump into the soapsuds. Houses may be rendered immune by dissolved alum in the whitewash or kalsomine applied to the interior walls, putting sheets of thick paper that have been dipped in an alum solution under the floor matting and scattering pulverized alum in all crevices where insects might lodge or breed. Powdered alum may be sprinkled upon carpets, already laid, and then brushed or swept into their meshes with no injury to the carpet, and with the certainty to many insects, including both moths and fleas. Sheets that have been soaked in alum water and then dried may profitably enclose those that are spread nearest to the sleeper.—*Medical Times*.

SHAKESPEARE'S MEDICAL KNOWLEDGE.—Dr. Wainwright has produced a most charming book on "The Medical and Surgical Knowledge of William Shakespeare" (published by the author), which can be rightly ap-

preciated only in an appropriate atmosphere. The evening; the soft light of the shaded lamp; the mellow warmth of a grate fire; a snug and ample armchair; the workaday coat discarded for the smoking jacket; the feet in comfortable slippers—such are fitting conditions for the reading of this edition-de-luxe volume, which manifests in its author vast reading, an affectionate insight, the Shakespearean spirit, and a mind and nature most generously cultivated.

Shakespeare (or Shakspeare, as Dr. Wainwright has it) has well been called "the thousand-souled," for there seems to have been no aspect of human life, no cosmic phase, indeed, with which he was not in sympathy. He certainly evidenced a remarkable acquaintance with the medicine of his day, in which there was much that is valuable to us in this twentieth century. The poet, who died in 1616, showed in "Hamlet" (which was published in 1603) an understanding of the circulation of the blood. Harvey announced his "discovery" in 1628, although he stated that he had for nine years previously been demonstrating the subject in his lectures at the "College of Physicians" in London. The fact is that Harvey's, like all epoch-making achievement, was the culmination of the patient labor and research of many men unknown to us to-day; his was the keystone in an arch that had been many years a-building.

Our present-day conclusions concerning immunity are well based on scientific demonstration, such as was impossible in Shakespeare's time; yet he manifests a fairly correct understanding of the antitoxic effects of minute doses of septic substances. And, indeed, as Wainwright points out, Galen, Mithridates, and the physicians of Nero's time understood very well this

protective and immunizing principle. The great dramatist expressed opinions concerning hypnotism and suggestion which are at least as well conceived as are ours to-day, and he recognized well the power which mind oftentimes exercises over matter. Infection, both physical and psychic, were well understood by him. We are to-day considering, as rather a novel idea, the advisability of music as a therapeutic agent; Shakespeare realized its influence both to "help madmen to their wits" and to "make wise men mad."

The experimental medicine of our day was certainly no new thing several centuries ago. Drugs were tried first on cats and dogs—"creatures of no esteem"; such "as we find not worth the hanging (but none human)." There seems, however, to be no record of anti-vivisection legislation in those matter-of-fact days. They bled for fevers in Shakespeare's time; and though many lives were by this operation cut off untimely, we make no doubt that many more were saved. With our scientific and discriminating knowledge we should to-day find venesection a most salutary measure in appropriate cases. Shylock told of the fear of cats, quite in the manner of Weir Mitchell's interesting paper on Ailurophobia. And by what prescience were the strictures of Cabot and Emerson concerning urinary analyses antedated, as thus: "What," asked Falstaff, "said the doctor to my water?" "He said, sir," answered the page, "the water itself was a good healthy water; but for the party that owned it, he might have more diseases than he knew for." The promiscuous dispensing of patent poisons was, as with us, punishable by the law; but in Shakespeare's time the punishment more nearly fitted the crime. The sale of them was "present death." And

empirics and quackeries were frowned upon; they were not to be preferred to "the congregated college."

Shakespeare constantly surprises us by his succinct symptom-accounts of apoplexy, hysteria, syphilis, epilepsy, the plague, goiter. His physiology was not very far wrong. He recognized the influence of heredity. He knew that wounds heal best by first intention; that they must heal from the bottom. Many drugs—aconite, mandrake, opium, colocynth, chamomile, hyoscyamus—are mentioned with understanding of their properties and effects. Altogether, Dr. Wainwright's valuable book impresses upon us that there is little new under the sun; that those who lived in other times than ours knew a great deal; that after all human thought, as well as human nature, is not radically different from age to age; and that a modest respect for the past were becoming even to this climatic twentieth century.—*Medical Times*.

THE DANGEROUS HOT WATER BOTTLE.—*The British Journal of Nursing* relates an inquest on the body of an infant seven months old who died in a London infirmary from the effects of scalds received. When the mother went to visit her child she was told it was dead, and that the nurse had put a hot water bottle in the bed by which, the cork having been loosened, the child was scalded. The nurse stated she had not discovered the mistake until some hours after, when she found the child severely scalded, "and the skin off its right side." Such accidents are much too frequently recorded; and there are many more which do not find their way into the press. In a recent case a patient who was successfully operated on for appendicitis, but was

burned by a hot water bottle, so that there was a raw wound on his leg nearly six inches in length. This necessitated an eight weeks' stay in the home, for which the unfortunate relatives had to pay full fees. The *Journal* considers that, in view of the multiplicity of these accidents, most of which are due to carelessness, the custom of a well-known training school of devoting a lecture in each course to the subject of hot water bottles is to be commended.—*Medical Times*.

A CONSIDERATION OF THE CAUSES AND CHARACTERISTICS OF THE WEAK FOOT.—Royal Whitman, New York, brings forward a theory of the causation of weak foot, which will account for the discomfort without deformity that is often found in this condition, and a treatment that is applicable to the prevention of the condition before advanced distortion has occurred. There are two contrasting postures of the foot, that of activity and that of inactivity. In activity the foot is incurved at the inner border and the arch is accentuated. In inactivity the foot is everted and the weight is directed toward the inner side of the sole. The abnormal persistence of the attitude of inactivity during exercise produces deformity. Abduction is caused by inward rotation of the leg upon the foot, and the astragalus supporting the leg sinks downward and inward upon the os calcis. Acquired flat foot and weak foot are an abnormal persistence of the attitude of abduction. The primary factor is the abduction, the secondary is the lowering of the arch. The symptoms are due to overstrain and injury to which disordered function has exposed the foot. Predisposing causes are insufficient support, due to congenital or acquired weakness of structure;

weakness of muscles; overweight or strain, and improper attitudes, that is imperfect adjustment. Improper attitudes include toeing out, the most important bad attitude. Improper shoes are often worn. Rachitis is a cause of weakness of structure. Symptoms include bad attitude, weakness, pain in feet, knees, and even back, and deformity with muscular spasm. Preventive treatment includes proper shoes and proper attitudes for children. Shoes should turn in. The brace used is made on an accurate plaster model made with the foot resting upon the outer border, slightly plantarflexed, and perpendicular to the table. The brace is of sheet steel extending from the bearing surface of the heel to the metatarsal bone. It is placed in the shoe, and the inner flange is pressed against the arch in positions of strain. It should hold the foot in place without discomfort. The inner side of the shoe is raised. Deformity may need to be corrected with or without anesthesia.—*Medical Record*.

SCABIES.—Franz Nagelschmidt (*Med. Klinik*).—To procure a rapid and certain result in the treatment of scabies, it is necessary that the remedy used does not irritate the skin; yet it must penetrate rapidly and kill not only the acarus, but also the ova. A new remedy, fulfilling these requirements, is thiophinol; it is used in the bath and as a five or ten per cent. ointment. The technique is as follows: The patient takes a thiophinol bath of 30 minutes' duration, and immediately after this he is carefully rubbed with 30 to 40 grams of a ten per cent. thiophinol ointment. The same ointment is applied once daily for the next two or three days, and on the fourth or fifth day a bath is taken, as in the beginning. In this way a cure may be

accomplished in five days, and a secondary dermatitis, due to the remedy, is never seen. Thiophinol has the advantage over other sulphur preparations in that it penetrates the skin more easily and is far better resorbed. Healthy individuals with an intact skin, when taking a thiophinol bath, show a large amount of eliminated sulphur after one day.—*Ex.*

The following conclusions are drawn by Harry C. Parker in a recent article in *The Journal of the American Medical Association*:

1. The calmette ocular tuberculin test is a great diagnostic importance as any other single test.
2. A positive reaction is indicative of a tubercular focus, somewhere in the body.
3. The test is uncertain in patients under two years of age, in whom the cutaneous test of Von Pirquet is most certain.
4. The test fails in advanced cases of tuberculosis, but there is little need of it here.
5. The initial instillation should be preferably under one per cent. strength in order that severe inflammatory conditions may not follow. If necessary to make the second and stronger test, the eye not previously used should be selected.
6. The consensus of opinion seems to be against using the test in an eye not wholly normal.
7. After complications have occurred from its use but have entirely cleared up in a varying length of time and are not so frequent when the initial test is made with a solution under one per cent., recent investigations have shown a greater number of ophthalmic affections due to tuberculosis than formerly supposed. And in the calmette reaction we have a simple

means of differential diagnosis, which should be thoroughly tried.

8. The ocular reaction is especially valuable for ascertaining the tuberculous nature of cases of phlyctenular keratitis and conjunctivitis, episcleritis and scleritis, chronic iritis, iridocyclitis, interstitial keratitis and chorioiditis.

9. A one per cent. solution of Koch's old tuberculin is nearly as good as the calmette solution for diagnostic purposes.

10. The test in the hands of various observers has given such uniformly excellent results that its value is practically assured.—*The American Practitioner and News.*

THE PHYSIOLOGICAL ACTION OF THE PANCREATIC ENZYMES, WITH SPECIAL REFERENCE TO HEMATOLOGY, UROLOGY, AND CLINICAL PATHOLOGY.—Margaret A. Cleaves calls attention to the dangers and discouragements of the use of trypsin in the treatment of cancers, while at the same time stating that the advantages outweigh all the disadvantages. Enzymes occur only in conjunction with cell life and accompanying proteid substances. The action of enzymes is splitting up and catalytic. They probably act as dehydrating agents and deoxidizers. Toxicity is a characteristic of enzymes injected into tissues. Their activity comes only when they are discharged from the cell. The author divides her cases into those of intestinal surgical interference, postoperative and inoperable cases, metastases, and non-malignant cases. She gives examples of each division. The preparations used are prepared from the fresh pancreas, and contain trypsin and amyllopsin. They are used hypodermically by preference by injection into subcutaneous tissues, or into the cancer, by

rectum, and by mouth. The dose of trypsin varies with the pathological condition and the condition of the kidneys. Nonmalignant cases bear it very well in large doses. By rectum the dose is twice that by hypodermic. Amylopsins used to control the poisonous symptoms produced by the trypsin. Locally there is slight reaction, but the general reaction consists in chills, rise of temperature, rapid pulse and respiration, and appearance of a rash. Moderate leucocytosis appears, and eosinophilia. The eosinophile reaction is probably due to degeneration of the cancerous growth, and appearance of a pathological amount of glycogen in the circulation. It produces a profound irritation of the sympathetic system characterized by redness and swelling. There is relaxation of sphincters and excretion by the kidneys, producing symptoms of nephritis. Indican is present in the urine in large amounts. Results are relief from pain, lessening of discharge and odor, improved metabolism and increased mental and physical vigor. In some instances the growth is absorbed. It should be used early in combination with surgical interference, and to prevent metastases.—

Medical Record.

ENLIGHTENMENT OF THE PUBLIC IN MEDICAL MATTERS.—In his presidential address, Dr. H. L. Burrell, of Boston, calls attention chiefly to what he considers a duty of the medical profession at the present day, viz., that of judiciously educating the public in the present position of medical knowledge and in the advances that are being made in scientific medicine. Heretofore the profession has been properly conservative, but now a judicious publicity is advisable.

Having the accepted facts that bear

on the welfare of the people, he asks, is it not our duty to make them known? He refers to the steps already taken, the establishment of the Board of Public Instruction by the Association. It will be better, he thinks, to teach thoroughly a few important subjects than to attempt to cover too wide a field. Tuberculosis is still the most pertinent subject for public information. Other subjects are: The facts as to the importance of early diagnosis and operation in cancer, the measures to be taken against infectious diseases, proper sanitation of homes, schools, and other public buildings, etc.

The leaders and those in responsibility are the ones who should be first enlightened, mooted subjects should be avoided, all information sent out should be duly edited by competent authorities, and nothing should be anything but the actual verified truth. Newspapers and magazines should be utilized, and circulars and special pamphlets on matters of special public interest be distributed.

The effect of thus educating the public would be to force ignorant or careless physicians to inform themselves as to the most recent advances. One of the most important movements in the American Medical Association is the establishment of county graduate schools in the various states. Another important work is that of the Counsel on Medical Education and its monitorship over medical schools. Let the Council give to the profession, and to the public, if necessary, the facts concerning the various medical schools of this country; publicity will do the rest. Free lectures on selected medical subjects are mentioned as constituting one of the most useful methods of spreading information, and the successful use of such, particularly in Chicago and Boston, is noticed.

In conclusion, Burrell speaks of the opportunities of the family practitioner in this work of public enlightenment. There is, he believes, a distinct reaction against the obliteration of the family practitioner. He it is who should be the instructor of the family, particularly in regard to the subjects that cannot, with propriety, be taught the public in masses, and he must not shirk this responsibility.—*Journal of the American Medical Association.*

LEPROSY IN THE PHILIPPINE ISLANDS AND THE PRESENT METHODS OF COMBATING THE DISEASE.—Victor G. Heiser describes leprosy as introduced into the Philippines, in 1632, from Japan by Christian converts. Before the American occupation nothing was done to prevent its spread, but great and valuable work was done by the friars and sisters in alleviating the sufferings of the sick in the San Lazaro Hospitals. The aim now is to segregate as many as possible of the lepers from those islands in which there are fewest victims, and to maintain those islands free from it by immediate removal of new victims. The expense of their care renders it impossible at once to colonize all the lepers in the islands. There are about 3,500 lepers in all in the islands. The colony at Culion will accommodate 800, and there are now about 550 at the island. The colony is placed on a plateau 150 feet above the sea. It has been provided with a good water and sewer supply, and the best sanitary conditions. There are 125 nipa houses, a church and house for the presidente. This is a most democratic government, consisting of president and councillors elected by the people. It is impossible to make the colony self-supporting on account of the numbers of disabled and bedridden pa-

tients, and the amount of work needed in taking care of them, as well as the impossibility of engaging in manufactures. Cattle raising may in the future be initiated. Much attention to the best remedies for the disease has been given, and the only remedy of value has been found to be the X-ray. Three cases have been successfully treated, one died of another disease and showed no bacilli at time of death. The others have relapsed, but are again improving under renewed treatment.—*Medical Record.*

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Notes and Comments.

TREATMENT OF TUBERCULOSIS OF THE UPPER AIR PASSAGES.—In a paper presented to the recent International Laryngological Congress at Vienna, J. W. Gleitsmann reports particularly on tuberculosis and lupus of the nose, pharynx, and nasopharynx. The various headings of this interesting paper are as follows: I. Tuberculosis of the nose, (1) local treatment by drugs, (2) hot-air cauterization, (3) tuberculin preparations, (4) ray therapeutics, (5) surgery. II. Tuberculosis of the nasal accessory sinuses. III. Tuberculosis of the post-nasal space. IV. Tuberculosis of the pharynx. V. Lupus. VI. Conclusions. Under the final heading the author makes the following observations: Surgical interference, as well as lactic acid and the galvanic cautery, will always preserve their full value, and the latter is especially well recommended. Of the newer remedies there are the hot-air cauterization and the Finsen light, and solar rays with or without fluorescent remedies. We may expect more and better results from continued experiments from the Rontgen ray and radium. The author's best results

have followed surgical operations, the galvanic cautery, parachlorphenol in intact infiltrations, lactic acid in ulcerations, and tuberculin preparations in proper cases.—*Medical Record*.

URTICARIA FOLLOWING THE SECOND ADMINISTRATION OF DIPHTHERIA ANTITOXIN.—Alexander W. Blain, of Detroit, Mich., describes seven cases of administration of antitoxin to adults in a second dose, with the result of the appearance of a painful and distressing urticaria. The serum was given for immunizing purposes the first time, and the second time for a supposed Klebs-Loeffler infection, which proved to be tonsillitis. Blondes seem to be affected more seriously than brunettes. The second immunizing dose should be given with caution in blondes, regardless of how long it is since the last injection. A supposed infection with diphtheria should be kept under observation, and the diagnosis confirmed before antitoxin is again given. When it becomes necessary to give it an attempt should be made to regulate the dose in comparison with the severity of the infection, and the serum should not be pushed too far.—*Medical Record*.

THE IMPORTANCE IN SURGICAL CASES OF CORRECTING DEFECTIVE UNSTRIPED FIBER, AND SUGGESTIONS OF METHODS.—Alfred T. Livingston, of Jamestown, N. Y., believes that defective unstriped muscle fiber is the cause of many serious conditions that are met with by the surgeon. If this defective unstriped muscle is taken care of we shall be assured of safety in anesthesia, relief from shock, freedom from pain, or its modification, avoidance of inflammation and repair of injured tissues, and of much increase of comfort and well being to the patient.

The defective unstriped fibre that is indicated is that of the blood-vessels especially. Heart weakness is due to the improper distribution of the blood in the vessels, resulting from weakness of the blood-vessels' muscular coats at some point. Correcting this weakness will equalize the pressure and relieve the heart from undue strain. This will also lessen or relieve shock, and make anesthesia safe. Pain is a sensory interpretation of vascular plethora about a given nerve. Lessen this plethora and you relieve the pain. A prime factor in inflammation is congestion, and this, too, is relieved and the inflammation prevented by equalizing the blood pressure all over the body. Repair will now be rapid. Defective unstriped fiber in the colon and small intestine permits of fecal accumulation, and the correction of this fiber will give wonderful results in removing old accumulations of feces. The means recommended for this correction are massage, dry cupping, electricity in the form of galvanism, cold, and best of all, ergot. The last should be given cautiously, yet without fear of ergotism. Its use should be hypodermic, with a sterile solution and syringe, and should be rather preventive than curative.—*Medical Record*.

ANTITOXIN TREATMENT OF TETANUS.—Urban reports two cases of tetanus in which death soon followed injection of antitoxin. In a third case no benefit from the antitoxin was visible. As a last resort the compound fracture of the leg was rinsed with one per cent. silver nitrate solution daily, commencing the tenth day of severe tetanus; the first symptoms were noticed the twentieth day after the accident. The patient rapidly recovered. *Münchener medizinische Wochenschrift*.



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PAINLESS APPLICATION OF CORROSIVE SUBLIMATE.—L. F. Appleman (*Amer. Med.*) states that when solutions of bichloride of mercury are made with normal salt solution instead of water, they do not cause the slightest pain when applied to the mucous membranes.—*Denver Medical Times.*

STAGE OF INVASION SCARLET FEVER. The bowels should be thoroughly evacuated, and some antipyretic often must be given to reduce the high temperature. Little nourishment need be given in the first 24 or 48 hours, but water should be given freely. Antiseptic gargles should be begun.

[The following is an easy method of computing the dose of a drug according to age:

At twenty years the adult dose.

At ten years, one-half the age, one-half the dose.

At five years, one-fourth the age, one-fourth the dose.

At two and one-half years, one-eighth the age, one-eighth the dose.

At one year one-twelfth the dose. (Osborne's "Materia Medica and Pharmacology," p. 113.)

The table is applicable to the doses of most drugs except strong narcotics, as opium and its alkaloids.]

For a child ten years old:

℞ Hydrargyri chloridi mitis, gr. iiss.

Sodii bicarbonatis, gr. x.

M. et fac chartulam j. Sig. Give at once with milk.

For a child three years old the following may be used:

℞ Hydrargyri chloridi mitis, gr. j.
Sacchari albi, gr. xv.

M. et fac chartulam j. Sig. Give at once.

Or, for a child five years old:

℞ Hydrargyri cum creta, gr. v.

Fac chartulas ij. Sig. Give a powder at once, and repeat in ten hours if needed.

For a young child:

℞ Magmae magnesiæ (N. F.)
(Milk of magnesia), fl. ʒ iij.

Sig. One or two teaspoonfuls, in milk or water, and repeat during the disease as needed.

The following may be given to a child five years old for high fever in the first stage of the disease:

℞ Acetanilidi, gr. v.

Sacchari albi, ʒ j.

M. et fac chartulas x. Sig. A powder every three hours for two or three doses, and then only as directed.

For a child fifteen years old, the following is useful:

℞ Acetanilidi, gr. viiss.

Camphoræ monobromatæ, gr. iv.

Caffeinæ citratæ, gr. iiss.

M. et fac capsulas v. Sig. A capsule, with water, every three hours

for two doses, and then only as directed.

For a child eight years old:

℞ Acetphenetidini, gr. xij.

Fac. chartulas v. Sig. A powder every three hours for two doses, then only as directed.

For the throat, the following gargle may be used:

℞ Aq. hydrogenii dioxidi, fl. ʒ vj.

Sig. Dilute with three parts of warm water and use as a gargle every three hours during the day, and every six hours at night.

After gargling with the above, the throat should be cleansed of the irritant peroxid with warm weak salt solution or with a bland alkaline solution.

If the child is too young to gargle, the throat should be swabbed or sprayed with the peroxid full strength (or diluted, depending on the age) and this application should be quickly followed with a soothing spray.

Also the following gargle should be used to alternate with the peroxide solution:

℞ Acidi borici, ʒ ij.

Aq., fl. ʒ vj.

M. Sig. Use as a gargle every three hours during the day and every six hours during the night.

These two gargles should alternate, i. e., one or the other should be used every one and one-half hours during the day, until all membrane or follicular exudate has disappeared from the throat, then the peroxid should be used only infrequently for a day or two and then stopped altogether. The boric acid solution should be continued as a gargle three or four times a day. If the throat remains red and irritated, a change may be made to:

℞ Potassii chloratis, ʒ iiss.

Aq., fl. ʒ vj.

M. Sig. Use as a gargle every three or four hours.

Or:

℞ Liq. antiseptici, fl. ʒ vj.

Sig. Use as a gargle or spray, clear or diluted, as directed.

Or:

℞ Liq. antiseptici alkalini (N. F.), fl. ʒ vj.

Sig. Dilute with four or five times its volume of warm water and use as a gargle.

Stage of Eruption. — Gargles and sprays are to be continued in this stage. Occasional doses of laxative may be given if needed. A milk and gruel diet is indicated, with plenty of water to drink. If the fever is high, an ice cap may be applied to the head, with tepid water sponging of the body. Ice throat bag or cold pack to the neck and throat may be used if there is a tendency to glandular inflammation. If sponging is deemed inadvisable, an occasional dose of one of the coal-tar products may be given, provided the pulse is of good character. The nostrils should be kept clean by spraying with a warm alkaline solution as represented by the Seiler's tablet or other equally bland solution. The ears should be watched and expert care given them, if such is needed. Bromids often must be given for restlessness and sleeplessness. The urine should be examined daily. Alcohol and strychnin as cardiac stimulants and tonics had best not be given unless the circulation positively requires them, and then they should be administered with care.

For a child ten years old the following may be prescribed:

℞ Sodii bromidi, ʒ iiss.

Aq. cinnamomi, fl. ʒ iij.

M. Sig. A teaspoonful, in water, at 9 P. M.; repeat the dose in three hours if needed, and then only as directed.

Stage of Desquamation. — The milk and cereal diet should be continued.

Coffee, tea, alcohol, and meat should not be allowed, and any drug that irritates the kidneys should not be given. As soon as the patient is strong enough he may sit up and be about the room, but he should remain in one, or at most two rooms, until desquamation is completed. How soon he may go out of doors depends on the time of year.

While more or less kidney congestion is a part of this disease, and should not be considered as a complication, at the same time during the period when the skin is unable to perform its eliminative work properly, chilling of the surface of the body will tend to precipitate a nephritis.

Care of the Skin. — The itching, which is often a very troublesome symptom, can be relieved during the acute stages of the disease by sprays of cologne or menthol and alcohol. Later, when desquamation is taking place, warm sponge baths should be given daily, with applications three times a day of some simple ointment, which will soothe the irritated skin and prevent the flying about of the epidermis, and thus prevent the spread of contagion. Where there is a tendency for the hands to "peel," or desquamate, for a long time, the child should wear cotton gloves. This will allow him to go about the house without spreading contagion.

For the itching the following may be used:

℞ Mentholis, gr. 65.

Cologne, fl. ʒ 3.

M. Sig. Use externally as directed. Or:

℞ Chlorali hydrati, ʒ j.

Sodii salicylatis,

Glycerini,

Alcoholis, aa fl. ʒ ij.

Aq., q. s. ad fl. ʒ vj.

M. Sig. Use externally as directed.

Or a soothing ointment, such as the following, may be used:

℞ Adipis lanæ hydrosi, ʒ ij.

Petrolati liq., fl. ʒ ij.

Ol. lavendulæ florum, m v.

M. Sig. Use externally as directed.

Or:

℞ Eucalyptolis, fl. ʒ iiss.

Petrolati albi, ad ʒ ij.

M. Sig. Use externally as directed.

Or, where there is some itching:

℞ Mentholis, gr. x.

Phenylis salicylatis,

Ol. olivæ, aa fl. ʒ ij.

Adipis lanæ hydrosi, ad ʒ ij.

M. Sig. Use externally as directed.

Or:

℞ Phenolis liquefacti,

Mentholis, aa gr. xv.

Petrolati liq., fl. ʒ ij.

M. Sig. Use externally as directed.

If acute parenchymatous nephritis occurs, the form which follows scarlet fever, its treatment is that of any acute nephritis.—*Jour. A. M. A.*

OXYGEN.—Dr. C. B. Dennie, of Cleveland, writes as follows: Oxygen as a successful therapeutic agent in many pathologic conditions is receiving the attention of some of the ablest men in the profession, both at home and abroad. While its greatest field of usefulness is yet undetermined, the consensus of opinion seems to favor its use in incipient tuberculosis, shock and the affections of the lungs and air passages. Prof. Vanderpool Adriance, of New York, who has used it extensively in the bronchopneumonia of children in one of the Orphan Asylums, declares that its advantages are quite pronounced. Dumas, of Lyons, after a series of experiments in pneumonia, says that "the anxious look

disappeared, cyanosis lessened, convulsive inspiration subsided, pulse became fuller and more regular and respirations decreased." Buck, of Boston, Mass., reports that most of his cases of incipient tuberculosis were not only improved by spray of oxygen through a tubular electrode, but many of the lesions were apparently cured—presumably encapsulated by fibrous tissue. There is no doubt of its benign influence preceding engorgement (consolidation) and resolution in pneumonia. The writer believes that the most satisfactory results from the use of oxygen are obtained in nervous shock and nearly all shock is of that character.—*Cleveland Med. Jour.*

PRECOCIOUS BALDNESS OR HYPERKERATOSIS.—

℞ Salicylic acid, 0.75
Tanno-bromine,
Thigenol,
Tinct. cantharides, aa grm. 1.
Ess. of roses, gtt. 1.
Beef marrow, grm. 30.

M. Sig. For external use. Use as ointment on head three times a week. After hair ceases falling out use once a week only for a short time. *Saalfeld, The Lancet-Clinic.*

CREOSOTE CARBONATE IN THE PNEUMONIA OF CHILDREN.—A. Fletcher (*Canada Lancet*) says this remedy is supposed to be carried into the bloodstream unchanged and conveyed to the cells of the lungs to be excreted. The breath is soon loaded with its odor, and the skin aids in its excretion. The drug is brought into direct contact with the tissues in which the pneumococcus is developing. The dose for a new-born infant is one minim per hour. The adult dose is seven to fifteen minims every two, three or four hours. It may be given dropped on a lump of sugar. No gas-

tric disturbances follow its administration. It is claimed that this treatment will reduce the death-rate from 25 to 5 per cent.—*The Lancet-Clinic.*

ANTISEPTIC LIQUID SOAP.—

℞ Saponis mollis,
Katharmon,
Aq., aa ʒ iv.
Alcoholis, ʒ iiij.
M. et adde.
Acidi carbolic, ʒ j.

The Med. Fortnightly.

PREVENTION OF PHOSPHATIC URINARY LITHIASIS.—Klemperer (*Progressive Medicine*) says that phosphatic deposits are favored by over-excitability of the nervous system, with consequent gastric hyperacidity, and are combated by the ingestion of alkaline waters in large quantities.—*Denver Med. Times.*

AGREEABLE CASTOR OIL MIXTURE.

℞ Ol. ricini, grm. 30.0.
Syr. rhei, grm. 20.0.
Alcoholis, grm. 15.0.
Ol. menth. pip., gtt. 2.
M.—*Jour. de med. de Paris.*

CHRONIC RHEUMATISM. — Grasset prescribes (*Jour. de med. de Paris*):

℞ Chloride of gold and of sodium,
g. 0.10.
Aq. dest., g. 300.0.

M. Take a tablespoonful of this solution with each meal for fifteen or twenty days of each month.—*Med. Rev. of Reus.*

ENTERALGIA.—

℞ Argenti nitratis,
Ext. hyoscyami, aa gr. 6.
Kaolini, gr. 40.

M. Ft. pil. No. xxiv. Sig. One pill two hours before meals.

Indications. — Used in enteralgia with intestinal catarrh.—*Ex.*

RACHITIS.—

R Ferratini,

Quininæ tannatis, aa gr. xxiv.

Theobromatis, 3 iv.

M. Ft. trochisci No. xxiv. **Sig.**

Take a lozenge three times a day after meals.

Indications.—Useful in anæmia and anorexia in rickety child two or three years old.—*Ex.*

TO PREVENT URETHRAL FEVER.—

D. A. Freudenberg relates in *Klinische Therapeutische Wochenschrift* how, for the last four years, he has been using camphoric acid in powder in doses of one gramme three times a day, and also immediately before catheterization, and has had a complete absence of urethral fever following the use of the catheter. The remedy, however, disturbs the stomach very much.—*The Lancet-Clinic.*

(CEDEMA.—

R Tabellas strychninæ sulphatis
No. iv, aa gr. $\frac{1}{16}$.

Sig. One tablet hypodermically, and cautiously repeat as required.

Indications.—In acute pulmonary and cerebral oedema of nephritis. Also administer brisk, rapidly acting purge.—*Ex.*

INFLUENZA KNEE.—Franke (in the *Deutsche Zeitschrift für Chirurgie*) discusses an arthritis, post-influenzal, which occurs in the chronic afebrile period during which the bacillus remain in the body (the patient is sensitive and liable to "colds," complains of chilly feelings; the anterior pillars and edge of palate are red, while the vault of pharynx and tonsils are unaffected; the tongue shows large red papillæ on a gray background, and the color of the skin has a grayish hue; the heart is dilated, pulse irregular, and the spleen slightly enlarged; there

may be harsh sounds over apices of lungs). In addition, the articular changes are characteristic; the small joints of the fingers and knees are most often affected. The bone is inflamed, and in the fingers the peri-articular tissues also; the tenderness in the case of the knee is typically over the inner condyle; the pain is dull and is considerable disability; the onset is slow and there is little tendency to suppuration or permanent stiffness. Of the various reflexes, the knee-jerk is alone increased. Osteitis, with softening immediately under the cartilage, has been found. Heat, iodides, rest and salicylates are recommended.—*Therapeutic Gazette.*

AFTER-PAINS.—

R Tinct. opii deodorati, fl. 3 i.

Chloralis, gr. 40.

Elix. aromatici, q. s. ad fl. 3 j.

M. **Sig.** Teaspoonful in water not oftener than every four hours.

Indication.—When pain is severe, and not due to retained clots.—*Ex.*

TO PRESERVE INSTRUMENTS AGAINST RUST.—One part of paraffin oil is dissolved in 200 parts of benzine, and the instruments, after being thoroughly dried and warmed are plunged into the solution. Instruments with joints, such as scissors or needle-holders, are worked in the fluid, so as to cause it to penetrate into all crevices, and the benzine is then allowed to evaporate in a dry room.—*American Journal of Surgery.*

SMALL-POX.—

R Tinct. benzoini comp., fl. 3 j.

Listerinæ, q. s. ad fl. 3 viij.

M. **Sig.** Teaspoonful to half cup of water, and use as mouth-wash every hour or two.

Indication.—Used for sore mouth.
Ex.

EXPECTORANTS.—Professor Eichhorst, in the *Deutsch medizinische Wochenschrift*, includes narcotics under this heading, and considers that the best way to check the fits of coughing due to tracheitis is to give the following:

℞ Codein. phosph., gr. 5.
Aq. amygd. amer., $\frac{3}{4}$.

M. Sig. To take ten drops three times a day.

If the coughing fits are accompanied with anorexia, nausea, etc., this may be given:

℞ Codein. phosph., gr. 5.
Syr. rubi., 3 6.
Acid. posph. dil., 3 3.
Aq., ad $\frac{3}{4}$ 6.

M. Sig. One tablespoonful three times a day.

All the other narcotics are open to objection and should not be used, as they produce disagreeable secondary effects. In every case this class of remedy must be given up when the air passages are clogged with secretions, for there is a risk of setting up or of increasing cyanosis.

The true expectorants exert a dissolvent effect upon tenacious and adherent secretions, and when this is present it is useful to prescribe:

℞ Potass. iodidi, gr. 45.
Syr., $\frac{3}{4}$ 6.
Inf. ipecac. radices, ad $\frac{3}{4}$ 6.

M. Sig. One tablespoonful every other hour.

An expectorant effect is obtained at once by means of the following prescription:

℞ Acidi. benzoic, gr. 5.
Camphoræ, gr. $\frac{3}{4}$.
Pulv. sacchar., gr. 3.

M. Ft. pulv. No. 10. Sig. One powder in capsule every other hour.

For chronic affections, like bronchorrhœa and putrid expectoration, the balsams are best, especially the essence of terebinth. (one drachm in

three doses during the day in milk); myrtol (in gelatin capsules containing gr. iiss) every two hours, is an excellent remedy. For the others, including the balsam of Tolu, the author has no use. Catarrhal bronchitis is often of an infectious nature, and Eichhost prefers to treat these seasonable attacks with benzoyl guaiacol, or benzosol, in doses of $7\frac{1}{2}$ grains, three times a day. It is given as a powder flavored with peppermint and sugar. For chronic catarrhal bronchitis he recommends the fluid extract of hydrastis, *m* xx-xxx, four times a day. Steam may be included among the expectorants; the patient's room should be saturated with it. Lying face downward, the legs raised above the level of the trunk, will help expectoration in some cases; and another aid is rhythmical compression of the lower part of the chest.—*The Practitioner*.

ASIATIC CHOLERA.—

℞ Salopheni, 3 ij.

Ft. chart. No. 24. Sig. One powder every two hours.

Indications.—Use as prophylactic, and also as intestinal antiseptic during attack.—*Ex*.

TO STERILIZE MILK.—To sterilize milk, support the bottles containing the milk in a vessel of water. When the water reaches 167° F. draw the vessel to a cool part of the stove and let it remain for twenty minutes, then remove the bottles and keep in a cool place.—*The Medical Fortnightly*.

SCARLET FEVER.—

℞ Acidi carbolici, fl. 3 j.
Ol. olivæ, fl. $\frac{3}{4}$ xvj.

M. Sig. Anoint body freely several times a day.

Indications.—Used to allay itching and reduce fever.—*Ex*.

SILVER NITRATE IN DISEASES OF THE EYES.—Francis Valk, M. D., of the New York Post-Graduate in the *Medical Council*, says he uses in the eye a formula suggested twenty years ago by Fox and Higginbotham, of England, in skin diseases. Sweet spirits of nitre, probably by its nitrous acid, prevents the precipitation of the silver in aqueous solution. The following is an average formula:

℞ Argenti nitras, gr. v.
Spir. nit. dulc., 3 ij.
Aq. dest., 3 vj.

M.

This solution may be freely applied to the conjunctival surfaces as necessary. It need not be neutralized by solution of salt, and its action must simply be watched, as the continued use for a considerable period may produce a slight discoloration of the mucous membrane in the lower fold of the conjunctiva (argyrosis). This is useful in all inflammations of the conjunctiva, from mild pink-eye to gonorrhœal ophthalmia and ophthalmia neonatorum.—*Wisconsin Med. Rec.*

STINKING FEET.—

℞ Picric acid, grm. 5.
Alcohol, grm. 100.

M. Use on foot in cotton for eight days.—*Chandere, Jour. de med. de Paris.*

POTASSIUM PERMANGANATE IN THE TREATMENT OF SNAKE BITES.—The author has used permanganate successfully in the following manner: As soon as possible a tourniquet is placed above the bite, and potassium permanganate (about one to two cubic centimeters of a one per cent. solution) is then injected subcutaneously around the wound, entirely encircling it. The poison, which has not as yet been absorbed, is thus oxidized and made harmless. Any general symptoms

which may already have set in are treated in the usual way with whisky, etc. In certain regions where venomous snakes abound many of the inhabitants habitually carry vials containing a solution of potassium permanganate and use it in the way just described.—*Archiv. fur Schiffs und Tropen-Hygiene.*

FOLLICULAR TONSILLITIS.—For this affection I use:

℞ Tinct. chloride of iron, ʒ iiss.
Tinct. capsicum, gtt. xxx.
Potass. chlorate, 3 iv.
Phenol, gtt. xx.

M. Sig. Use as a swab for throat and tonsils. This used night and morning on a case of follicular tonsillitis (diagnosed by a health officer as diphtheria) effected a cure in 48 hours.—*Albright's Office Practitioner.*

SUBLIMATE INJECTIONS IN POTT'S DISEASE.—Torenito Silvestri (*Gazz. degli. Ospedali*), reports that for Pott's disease he has used sublimate injections with good results. He recommends a daily intramuscular injection of $\frac{1}{16}$ to $\frac{1}{8}$ grain, in dilute watery solution. The treatment should not extend for a longer time than 60 days, and then after an interval of six months, another course can be begun. If there is decided pyredia, it is a contraindication to this treatment.—*New York Medical Journal and Philadelphia Medical Journal.*

HEADACHE.—

℞ Potassii bromidi, 3 iv.
Sodii arsenatis, gr. ss.

M. Ft. tab. comp. No. xxiv. Sig. Two tablets every four hours until relieved.

Indications.—Used in headache of menopause, or from slight operations upon the uterus. Also headaches following nervous excitement.—*Ex.*

NASAL CATARRH.—The following combination has been found valuable to prevent incrustation of the nose in catarrhal conditions:

℞ Menthol, gr. v.
Camphor, gr. xx.
Ol. eucalyptus, *m* xv.
Petrolatum, ℥ j.

M. Ft. ungt. Sig. Apply locally to the nasal passages by means of cotton on an applicator.

Liquid petrolatum may be employed instead of the petrolatum, and used as a spray with an oil atomizer.—*Medical Bulletin.*

PNEUMOTHORAX.—Morphine or other sedatives may be needed to relieve pain, and sometimes even chloroform may be necessary. Stimulants, too, are usually required. Cupping the chest, or even venesection is particularly useful when there is much cyanosis. The removal of the air is needed when there is great distention and consequent dyspnea. A fine trocar should be introduced and the air be allowed to escape. Anything in the shape of aspiration would probably reopen the wound in the pleura, and more air would thus pass into the pleural cavity.—*The Hospital.*

INSOMNIA.—

℞ Hyoscianæ hydrobrom., gr. ⅙.
Camph. monobrom., 3 i.

M. Ft. cap. No. 15. Sig. One capsule at bed-time and repeat in six hours if required.

Indications.—Used to induce sleep in melancholia, neurasthenia and mania.—*Ex.*

INGROWN TOE-NAILS.—A small piece of cotton is saturated with a solution of liquor potassæ hydroxide (℥ j) in four ounces of water, and pressed gently in between the upper surface of the nail and the mass of

tender granulation-tissue (*Amer. Jour. Clin. Med.*). The alkali soon permeates the substance of the nail without irritating the sore; but to be effective the cotton must be kept constantly moist. The softened part of the nail is to be carefully wiped off every morning. In a few days the nail will have become sufficiently thin and soft to be cut away without pain. The application must, however, be continued until all granulations disappear and until healing is well under way.—*The Med. Times.*

PTYALISM.—

℞ Tinct. belladonnæ foliorum, fl. 3 ij.

Potassii bromidi, 3 iv.

Aq. camphoræ, fl. 3 viij.

M. Sig. Two to four teaspoonfuls three times a day to produce dryness of mouth and throat, then reduce dose and give at longer intervals.

Indications.—Used in ptyalism in pregnancy and in neurotic subjects.—*Ex.*

SODIUM CARBONAS MONOHYDRATUS. In itching in scarlet fever, which is sometimes intolerable, keeping the child restless and irritable, Dr. Seymour Taylor finds nothing more useful than sponging the body with a warm solution of sodium carbonate (grs. x to ℥ j) to which a little mucilage has been added. It forms a soothing and grateful application to an inflamed skin.—*The Dietetic and Hygienic Gazette.*

TINEA VERSICOLOR.—

℞ Sodii hyposulphatis, 3 iv.

Glycerini, fl. 3 iv.

Aq., q. s. ad fl. 3 viij.

M. Sig. Apply with soft cloth or sponge daily after bath.

Indication.—Used as parasiticide to remove discoloration.—*Ex.*

RAPID CURE OF SCABIES.—The cure of itch in an hour and a half is said to be attainable by the method practiced by Saboureaux (*Bulletin general de therapeutique*). The patient is first rubbed for half an hour with black soap (green or soft soap); he then takes an alkaline bath for half an hour. After coming out of the bath the entire surface of the body is well rubbed with:

- ℞ Oil of verbenæ, gtt. xxx.
- Gum tragacanth, aa gr. xxx.
- Precipitated sulphur, ℥ ij.
- Glycerine, ℥ iv.

To be well mixed.

A final bath is to be then taken, lasting from fifteen to twenty minutes. The clothing and body linen must be disinfected. During the fortnight succeeding this treatment four baths of starch water are given. In case there should be cutaneous irritation, local applications of zinc oxide are used.—*New York Medical Journal*.

ANOREXIA.—The following has been recommended in simple anorexia:

- ℞ Tinct. nucis vomicæ, 3 iv.
- Ferri et quiniæ citratis, 3 iij.
- Tinct. gentianæ comp., ℥ j.
- Vini xerici, q. s. ad ℥ vj.

M. Sig. A teaspoonful in water before meals.—*Ex.*

HEPATIC COLIC RELIEVED BY GLYCERINE.—Plantier (*Tribune medicale*) approves of the method of Ferrand, who treats hepatic colic with glycerine. This treatment has the following advantages: 1. Taken by the mouth it is directly absorbed by the lymphatic vessels going from the stomach to the liver; in this way it finds its way to the subhepatic veins. 2. It is a powerful cholagogue. 3. In large doses (five to eight drams) it relieves attacks of hepatic colic. 4. In small daily doses (one to four drams), taken

in alkaline water, it prevents a return of the attacks. It may be taken for months or years without injury, if pure and neutral; preferably in half a glassful of Vichy water.—*Ex.*

TINEA VERSICOLOR.—

- ℞ Resorcini Merck, 3 ij.
- Ol. ricini, fl. ℥ iss.
- Alcoholis, fl. ℥ ivss.
- Ol. lavandulæ, gtt. xx.

M. Sig. Apply locally.—*Merck's Archives*.

ELECTRIFICATION IN CONSTIPATION.

Bartholow relied on faradization of the intestines with an insulated electrode in the rectum, and a large sponge covered rheophore well moistened and passed over the abdomen along the course of the intestines. Juettner uses the secondary faradic current applied to the anterior abdominal wall by means of two sponge electrodes, which are shifted about constantly. Sometimes either pole should be placed on the back and the other on the anterior abdominal wall.—*The Electro-Therapeutist*.

NEPHRITIS.—

- ℞ Potassii iodidi, 3 ij.
- Syr. sarsaparillæ comp., fl. ℥ j.
- Aq., q. s. ad fl. ℥ iij.

M. Sig. Teaspoonful in water three times a day after food.

Indications.—Used in chronic contracted kidneys with high arterial tension and scanty urine. Unless urine increases in quantity within 24 or 48 hours after beginning the iodide, it should be discontinued.—*Ex.*

CYSTAMINE.—Hexamethylenetetraime lithium benzoate (*New York Medical Journal*), is a new candidate for favor in the treatment of gout, rheumatism and vesical and urethral catarrh.—*Denver Medical Times*.

TO REMOVE FRECKLES.—Take of pure iodine 24.00, potassium iodidi 12.00, glycerine 12.00, rose water 120.00. Paint this on the freckles and after twenty minutes remove the iodine stains with a mixture of three ounces of hyposulphate of soda to a quart of water. In mixing the first solution dissolve the iodine in a small part of the rose water to which has been added a drachm of glycerine. Rub together and add the iodine gradually, rubbing until in solution. Then add the rest of the prescription. — *The Lancet-Clinic*.

EXTRACTING TEETH.—The following local application for use in extracting teeth has been published in "Secret Nostrums and Systems:"

℞ Hydrochlorate of cocaine, parts 5.
Crystals carbolic acid,
Pure gum camphor, aa parts 6.
95% alcohol, q. s. ad parts 120.

It is used by saturating a piece of absorbent cotton with it and pressing against the gums for a few moments. *The General Practitioner*.

ACID CARBOLIC.—Geo. N. Acker, in the *Archives of Pediatrics*, reports a case of carbolic acid poisoning following an injection of a solution of the acid into the bowel. The injection was used for seat worms, the father having read in a family medical work that an injection of a mild solution of the acid was of aid in this disease. In another case the acid was used by mistake for boric which had been ordered. Recovery followed in both cases and in both the toxic action followed quickly, absorption being prompt. In the discussion, a similar case was reported, the poisoning following an injection of a solution of the acid for tape worm. The editor of this department saw a case in which

toxic symptoms followed the use of a solution of mercuric chloride into the rectum for the relief of seat worms. The remedy was advised in a popular household medical work and quite an amount of a one to 2,000 solution was retained. The child, ten years of age, was cold, with a weak pulse and severe tenesmus, but no salivation. Recovery followed. — *Cleveland Med. Jour.*

SCABIES.—

℞ Betanaphtholis, gr. xx.
Sulphuris præcipitati,
Balsami peruvianæ, aa 3 j.
Ungt. zinci oxidi, ʒ j.

M. Ft. ungt. Sig. Apply freely twice daily to the parts affected.

The patient should first take a hot bath before applying the ointment for the first time, then every second night before retiring. Request your patients also to change their underwear and bed linen every second day so as to prevent reinfection. — *The Med. Bull.*

STAGE FRIGHT.—To combat nervous asthenia and prevent stage fright (*Medical Fortnightly*), take ten drops of tincture of gelsemium three times a day. — *Denver Medical Times*.

ACUTE ARTICULAR RHEUMATISM.—

℞ Salicylic acid,
Oil wintergreen, aa 3 j.
Menthol, grs. x.
Alcohol, ʒ j.

Paint over affected joints with camel's hair brush every four hours and wrap in cotton. When skin begins to peel off, interrupt for a day or two, applying in the meantime the following ointment:

℞ Bismuth subnitrate,
Zinc ox. (finely powd.), aa 3 j.
Hydrous wool-fat,
Cold cream, aa ʒ ss.

Ex.

Johann Hoff's Malt With Iron

is an ideal preparation to build up

BLOOD and BODY

and is more readily absorbed into the
circulatory fluid than any other iron
preparation.

It is of marked value in all forms of
Anemia, Chlorosis and General Debility

EISNER-MENDELSON CO.
NEW YORK

Publishers' Department.

THE FREQUENT, URGENT DESIRE TO URINATE in old men, with some mucus discharge, is relieved by a teaspoonful of Sanmetto every three or four hours.

I am well pleased with effects of Echthol in severe cases of blood poisoning as an external remedy in all painful affections, especially rheumatic, as was demonstrated in the case of my wife, who was laid up in bed with a painful rheumatic affection of one of her feet, which after bathing and wrapping with Echthol, to my surprise was about the house again the next day. She swears by it, and will not allow me to be without it. I have also found it excellent in pruritus ani and erysipelas. I prescribe it through a druggist in Newburg, and have bought three bottles for myself. I am now using it in a case of ulcer in an old man, on the bottom of his foot, which is healing.

G. A. GORSE, M. D.,
Meadowbrook, N. Y.

ANTIKAMNIA CHEMICAL COMPANY TO BUILD STRUCTURE TO COST \$75,000. The Antikamnia Chemical Company, now located at 1624 Pine Street, St. Louis, will erect at the northeast corner of Pine and Fourteenth Streets, a five-story and basement building which will be used for manufacturing and commercial purposes. It will have a ground area of 81x109 feet, the latter frontage being on Fourteenth Street, and will be constructed of brick and concrete. It will be modern in every detail, being provided with sprinkler system, fast elevators, etc., and will cost in the neighborhood of \$75,000. The site has been owned by Mr. Frank A. Ruf, president of the company and a director in the Mercantile Trust

Company, who has had it for the past seven years. It is improved with one, two and three story buildings of antiquated type, earning a rental in no way in keeping with the value of the property. The Antikamnia Company will occupy all of the new structure, the upper floors being used for a can and box factory. Its present quarters at 1624 Pine Street are inadequate and the property on either side of it is so tied up that it can not be secured to extend the building. On this account the company expects to give up the building at the expiration of its present lease, which has a year or more to run, and to make the structure at Fourteenth and Pine its headquarters.

THE OPSONIC-INDEX THEORY IN ITS RELATION TO INFECTIVE PROCESSES.— Since the all important fact, that original infective elements, which we have learned to recognize as the causes of diseases, have become known to us as producing, by the action of their life-processes, substances as fatal to the continuation of their functioning life as the products of our life-processes are fatal to us, the life histories of these elements have become of the uttermost importance to the practitioner of medicine. So important are they that any failure to understand their influence may well be taken as a serious lack of the due appreciation of the knowledge of the hour, and this is just as true in relation to the original infective elements concerned in the causation of the inflammation process as it is in regard to the elements concerned in the production of the plague.

We believe the proposition "In almost every case the commonly accepted relation between the healing process and the suppuration must be abandoned" can be proved; this because we have learned that while sup-

uration is by no means an essential part in the healing of all wounds, as once it was supposed to be, yet there are certain injuries to which no satisfactory outcome is possible without the intervention of this, the so-called "miscarried," healing process.

During the last twenty years the writer has not willingly neglected any opportunity by utilizing which the process of suppuration could be studied, and he is satisfied that while no doubt this process of suppuration, of "inflammation gone wrong," is the least common of the recognized phenomena of life in a well regulated hospital, yet in the world outside it is one of the most common of the accidents of life. Of these foci of suppuration the most common is the abscess of any and all sizes, from the inflamed hair follicle to the terrible focus of suppurating cellulitis, such as is seen sometimes to follow upon the infection of a punctured wound. In these various sized abscesses an enormous number of species of original infective elements are to be found, and if the surgeon will take the trouble to examine the causal factors in the contents of the acne pustules which he sees and none beside these, he will soon find that the original infective elements in the list of "suppuration germs" three, or three score, the number of the species possibly to be found beside these is legion.

It has been the writer's fortune to examine the pus from hundreds of abscesses, in size from the head of a pin to one which, to all intents, filled the leg of the victim, as if the leg were a leather bucket, and if the examination were made soon enough he has in no instance failed to find that, be the suppuration-coccus what it might, white, yellow, or green, the matter of importance which made the abscess serious, or the reverse, was the bacillus which

accompanied it. In the most part of the cases it appeared that the complicating coccus came first and that the suppuration process was grafted on, so to say, upon this previous process, which had in all cases killed the tissue, and the seriousness of the following suppuration depended upon the extent of this tissue destruction made by the first invading element.

For example, nothing is in and for itself more insignificant than the suppuration which makes the pin-head abscess of the hair follicle. The whole course of the uncomplicated process is practically over in 24 hours, and there is no tissue-destruction worthy of the name, but let this process be complicated by the previous invasion of the tissues by a certain bacillus and the suppuration process is certain to leave an awkward scar. The cause of the scar is not the suppuration process, but the previous invasion of the bacillus, and the chances are that every one of the elements of the original infection are dead by the time the suppuration process has begun. The products of their life remain in the form of the infection after that they have already slain the tissue cells, and then the invading elements die, as a man might of uremic poisoning.

It is this state of things as much as any power of resistance inherent in the tissues which is the cause of the self-limitation of a number of forms of inflammation to which the word "specific" might be applied even more properly than it can to the various manifestations of syphilis. In connection with these forms three classes of original infective elements are found. To one of these the culture-media containing glycerine are things indifferent, to one glycerine acts as an inhibitant, but to the third it appears to act as a culture medium of the highest choice. So markedly is this the case

that while those bacilli will hardly grow to any satisfaction in a medium without glycerine, but persist for a very long time, on the other hand they grow luxuriantly, but presently are stifled in a medium to which the glycerine has been added, being drowned as it were in the products of their own life. So peculiar are the manifestations of this "drowning" that the phrase "uremic poisoning at once suggests itself, as being by analogy the most natural comparison to make." This is so emphatically true that those who saw the culture phenomenon for the first time, being physicians, and used to the phenomena of uremia, made use of the comparison as the one which naturally appeared fitting in the premises.

On this account it appears justifiable to use this as a phenomenon by which a distinction may be made, and to consider the original infective elements presenting this phenomenon as being of one class and those not presenting it as belonging to another. But the phenomenon would be only an interesting curiosity were it not for the fact that we see from time to time, in the practice of the professional duty of watching the development of a focus of suppuration, another phenomenon so exactly the same as to cause some surprise the first time that it is encountered, as for example, in cases in which Antiphlogistine is used as a dressing to encourage suppuration. In some of these cases the suppuration is wonderfully hurried, in others it does not appear to be influenced in the smallest degree either to hurry or to inhibit, while in the third class Antiphlogistine actually inhibits the suppuration process.

When an attempt is made to differentiate these cases, it becomes clear at once that the facts are as follows: (a) When the primary infection is one

which is encouraged by the influence of the glycerine, than the result is to hasten the primary process. (b) To the true cocci of suppuration the action is indifferent, or this process would be either hindered or helped, but in point of fact the suppuration process is not influenced in the least degree, either one way or the other. (c) To a third group the action of the glycerine is distinctly one of inhibition; it delays their life processes so that the elements are not only developed more slowly, but less numerously, and in a way relatively inefficient.

In point of fact the diseased nutrition is not influenced one way or the other. *Suppuration* as it results from the action of original infective elements is a thing unknown to *Antiphlogistine*, its influence being upon the infection which kills the tissue elements. It prepares the way for the activity of an after-process, which in these cases is the less important one, suppuration, which process may already be far advanced.

In one or two instances, at which the writer has been present, incision has been made prematurely and no pus was found, but a most instructive relation-series has been demonstrated, the blood having accumulated in the tissues in a gelatinous condition, like a warm thin glue, and in these cases a culture of a definite bacillus, almost pure, was found; but the most careful attempts failed to isolate the cocci of suppuration, yet in similar cases in which the same original infective element was present, but the process more advanced, the suppuration cocci was abundant. It is *this first part* of the process of the development of the infection which is so much influenced by the actions of *Antiphlogistine*.

In two cases in which the dates of infections were certainly known, and from which samples of the contents

of the swellings proved the intruding elements to be the same, one was treated with cataplasms of flaxseed and the other with dressings of Antiphlogistine, and in the case treated with the Antiphlogistine the bacilli which formed the primary infection were all dead, and the suppuration process was begun, five days before the exploration needle brought away any suppuration cocci from the other. Exactly the same result has been obtained from the same procedure in other cases, and so far as the writer can see the ground which he has taken is fully justified by the results in the cases referred to.

From his point of view it is a matter of indifference which of the half dozen theories the "party of the other part" may choose to advocate. He may say that the "opsonic-index of the blood is increased," as did Dr. Baketel, one of the physicians connected with the company which manufactures Antiphlogistine, or he may say with the writer that the growth of the original infective element is so stimulated that the said element is drowned in the products of its own life, as the writer phrased it, or he may speak figuratively as did the physician previously referred to and say that "the original infective elements died of uremic poisoning." The fact remains, however, that the action of Antiphlogistine by limiting the time during which the primary infection was active, and at the same time by stimulating the activity of the elements, thus increasing the amounts of their waste products, without correspondingly increasing the area invaded, lessened the resulting destruction of tissue. Or the facts observed can be expressed as follows: "By increasing the activity of the reproduction of the figured elements, without the corresponding increase in size of the infected area, the

amount of the material available for the nutrition of the original infective element is rapidly exhausted; and by the same rapid increase in the number of the original infective elements the waste products of their life-processes is increased likewise to the extent that the healthy life of the elements themselves is inhibited.

This inhibition presently results in the death of the already adult invading elements, and in such defective nutrition of the younger ones that these presently die also. Consequently there remain in the focus of infection the dead bacilli, vegetal-tissue elements, undergoing autolysis, and very young elements also far removed from adult-cell resistance, in the same condition, and besides these the remains of the animal cells slain by the invading bacilli at the first onset. Into such a focus as this the cocci of suppuration are introduced perhaps by the intervention of some wandering cell or carried in the blood current. These fix themselves to the side of a capillary vessel as they are seen to do in the experimental foci, and the beginning of the cure, the suppuration process is established.

Why the intervention of the original infective elements is needed, why suppuration does not begin until these elements appear, we do not know. We only know that it is a fact that it does not, and that if such elements do not appear then instead of the usual process of healing after suppuration, a slough is formed resembling that of dry gangrene and the loss of the tissue causes a terrible scar, and sometimes no trifling deformity.

Just as our fathers knew nothing of a healing process which knew not suppuration, so also they knew not a condition of the tissues such as this. Yet while not by any means common this condition is not so rare, for the blood

vessels are in the most part of the cases blocked at once after the death of the tissue cells, a list of demarcation is formed and the entire infiltrated area is sloughed.

According to the writer's personal observation, in those cases in which the elements whose life processes are stimulated by glycerine are present, the period from the invasion of the tissue by the destructive bacilli to the beginning of the removal of the dead materials by the rapidly proliferating pus-cells is shortened at the least one-half; but as has been said in the cases in which the element is one *not stimulated* by the glycerine no result is produced, and if the glycerine inhibits (as sometimes it does) the evolution is actually delayed.

In those cases in which the action of Antiphlogistine is later made quite evident by the demonstration of the figured element, the object of the use is, of course, to relieve the swelling by the de-hydration of the tissues. The glycerine as it were disappears, that is to say the dressing becomes dry, the glycerine having been absorbed into the sub-epithelial tissue leaving the solid matter upon the surface very much in the condition of dry earth.

The actual process is in all probability about as follows: The glycerine is absorbed by the tissue, the watery part of the exudation taking its place, and this is in turn evaporated by the excessive temperature, for in most of the cases the excessive temperature of the *locale* is not at all the least interesting feature. This condition of the dressing is all that is really needed to convince the physician familiar with the action of the preparation that he has to do with an infection to which any suppuration which may be present is wholly secondary, and this action is almost pathognomonic of the

condition which has given rise to the controversy as to the possible effect of Antiphlogistine as a producer of opsonins. But this condition is in no sense any proof of such action. The thing proved is not this action but another; that previous to the suppuration another form of tissue destruction had been going-on in this region, and that is all that has been so far proved. Yet this fact is the justification of the position of Dr. Baketel "that by the action of Antiphlogistine opsonins are produced," if only the limitation is taken into consideration, as of course is needed in this as in any other case. The action of glycerine upon the tissue is by this time well known to all, but a tendency exists to forget the fact that a figured element not a tissue element, nor even an anatomical element in an animal body, enters into the solution of this problem. If the fact that the animal body looked over large to Dr. Baketel is obvious, certainly it is just as clear that his opponent saw it through the wrong end of the telescope.

If, however, Dr. Baketel intended to say that the action of the preparation upon the tissues in certain cases was to inhibit the inflammatory process, then he was right. The doctor made no peculiar claims as a pathologist, but set forth an explanation of an observed fact. His opponent set forth another, and I a third, but it is probable all are true, not to the exclusion of either one, but to the inclusion of them all.

The point of importance is not the correctness of this explanation or that one, but the action of Antiphlogistine; and this preparation, Antiphlogistine, has both the actions claimed for it, the special action depending not upon the preparation, but upon the figured element which made the primary invasion of the diseased tissues. It is well to

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TABLE OF CONTENTS.

Therapeutic Cullings:		Freckles, To Re-	Pneumothorax,
		move,	110
Acid Carbolie,	112		Pott's Disease, Sub-
After-Pains,	107		limite Injections
Anorexia,	111	Headache,	in,
Antiseptic Liquid		109	109
Soap,	106	Hepatic Colic Re-	Precocious Baldness
		lieved by Glycer-	or Hyperkeratosis, 101
		ine,	Ptyalism,
		111	110
Castor Oil Mixture,			Rachitis,
Agreeable,	106	Influenza Knee,	107
Catarrh, Nasal,	110	107	Rheumatism, Acute
Cholera, Asiatic,	108	Ingrown Toe-nails,	Articular,
Constipation, Elec-		110	112
trification in,	111	Insomnia,	Rheumatism, Chron-
Corrosive Sublimate,		110	ic,
Painless Applica-		Instruments, To Pre-	106
tion of,	103	serve, against Rust,	
Cystamine,	111	107	Scabies,
			112
		Milk, To Sterilize,	Scabies, Rapid Cure
		108	of,
			111
		Nephritis,	Small-Pox,
		111	107
Enteralgia,	106		SNAKE BITES, Potassi-
Expectorants,	108		um Permanganate
Eyes, Silver Nitrate		Edema,	in the Treatment
in Diseases of the,	109	107	of,
		Oxygen,	109
		105	Sodium Carbonas
			Monohydratus,
			110
			Stage Fright,
			112
Feet, Stinking,	109	Phosphatic Urinary	Teeth, Extracting,
Fever, Scarlet,	108	Lithiasis, Preven-	112
Fever, Scarlet, Stage		tion of,	Tinea Versicolor, 101, 111
of Invasion,	103	106	Tonsillitis, Follicu-
Fever, Urethral, To		Pneumonia of Chil-	lar,
Prevent,	107	dren, Creosote Car-	100
		bonate in the,	
		106	

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